# The Journal of the American Medical Association

VOL. XXXV CHICAGO, ILLINOIS, OCTOBER, 13, 1900. No. 15

## Original Articles.

### PATHOLOGY OF MALARIAL FEVERS, STRUCTURE OF THE PARASITES AND CHANGES IN TISSUE.*

JESSE W. LAZEAR, M.D., U. S. A.†
HAVANA, CUBA.

For diagnosis the examination of the fresh unstained blood is usually sufficient, but for the study of the structure of the parasite, dried and stained specimens must be made. The blood is to be spread on the cover-slip in a thin uniform layer, so that the red corpuscles lie separate from each other. To obtain this result the cover-slips must be absolutely free from all foreign material. It is best to immerse them in alcohol and dry them carefully with a soft cloth just before taking the specimens, handling them with forceps rather than with fingers. A small drop of blood from the cleansed lobe of the ear is allowed to spread between two cover-slips, which are at once slid apart and allowed to dry in the air or by holding high above a flame. Another satisfactory method is to receive the blood from the ear on the edge of a slide and draw this rapidly over a cover-slip. In place of the slide a piece of cardboard or stiff paper may be used. After they are dry the specimens may be kept in a pill-box until studied, not delaying, however, longer than a month or two. The blood must next be "fixed" on the cover-slips by some procedure which will cause a coagulation of its albumin, so that it will not be washed off by the staining fluids used. Several methods are in use.

1. Keeping at a temperature of 110 C. for from ten minutes to an hour, or at 35 to 40 C., as in an ordinary bacteriological thermostat for twenty-four hours. This is satisfactory when only aqueous stains are to be used.

2. Immersing in absolute alcohol alone or in a mixture of equal parts of absolute alcohol and ether for half an hour.

3. Immersing in a freshly prepared .25 per cent. solution of formalin in 9 per cent. alcohol for one or two minutes. The formalin may be kept in stock as 10 per cent. aqueous solution, and four or five drops of this added to 10 c.c. 95 per cent. alcohol just before using. I have found this method the most satisfactory of all for the study of the blood in malaria, as it fixes the red corpuscles better than do the other methods. For general blood work, however, the heat method is better, as it fixes the granulations of the leucocytes so that they stain more freely.

Various methods of staining are used.

1. Treating with .5 per cent. solution of eosin in 60 per cent. alcohol for a minute and then with saturated aqueous solution of methylene blue or Loeffler's solution of methylene blue for five minutes. This method has been much used and has done good service, but new methods are so much better that it may be dropped entirely.

2. A rapid and serviceable method is to stain for twenty seconds in a solution made up of—

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| Saturated solution of thionin in 50 per cent. alcohol | 20 parts |
| Two per cent. carbolic acid | 100 parts |

To be used only after the solution has been made up for several months.

3. Staining for two or three days in Ehrlich's eosin-hematoxylin mixture gives very satisfactory results.

4. The method which is of most value is that of Romanowsky or one of its modifications. Its special merit is that it brings out the nuclear material or chromatin distinctly and in a color peculiar to itself. Romanowsky found that when the malarial parasite is stained in a freshly prepared mixture of methylene blue and eosin solutions in definite proportions, the protoplasm stains blue and a nucleus appears made up of a peripheral unstained portion and a central portion staining a deep carmin-violet. Other observers were unable to confirm these findings, until in 1897 Gautier announced that he had obtained the same results, but only when particular brands of methylene blue and eosin made by the Badische-Soda-Anilin Fabrik were used. Ziemann also confirmed the work of Romanowsky, but he used stains from the Hoechst factory and with certain variations in the technique.

Nocht discovered that the unknown nucleus-staining substance was present in polychrome-methylene blue, from whatever source it was obtained. His methylene-blue solution is prepared as follows: Dilute acetic acid is added to polychrome-methylene blue until it is feebly acid as shown by litmus paper. When litmus paper is dipped in the solution it is colored by the methylene blue, but at the margin of the moist portion of the paper a red line caused by the acid can be seen. More of the polychrome-methylene blue is now added until the solution is neutral in reaction. Polychrome-methylene blue can be bought ready made, or prepared by heating for several hours over a water-bath a solution made up of—

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| Methylene blue | 1 part |
| Caustic soda | 1 part |
| Distilled water | 100 parts |

This solution is to be filtered after it is cooled. To the neutralized polychrome-methylene blue solution an equal volume of water is to be added and then enough saturated aqueous solution of methylene blue to cause the polychrome color of the solution to disappear.

Nocht prepares his eosin solution by adding three or four drops of a 1 per cent. aqueous solution to 1 or 2 c.c. of distilled water. This is practically a .2 per cent

* Presented to the Section on Practice of Medicine at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

† Dr. Lazear died of yellow fever in Quemados, Cuba, September 26, his obituary appearing in our issue of last week.

solution and it is more convenient to make in quantity in this proportion. He takes 3 or 4 c.c. of the eosin solution and adds to it the methylene-blue solution drop by drop until the red color has just completely disappeared. I have found it more satisfactory to keep the two solutions in burettes, as is done by Bastianelli and Bignami. Having made up a liter or more of the separate solutions a few experiments will show the exact proportions of each which gives the best result, and thereafter the exact amounts can be easily measured out from the burettes. The two solutions should be mixed just before use in a covered staining dish with a concave bottom. The specimen is to be left in the stain for from three to twenty-four hours. A scum which forms on the surface of the stain should be removed carefully with a piece of filter paper, just before placing the specimen in it and again just before taking it out. The use of this method requires a certain amount of practice at the beginning, but it gives such wonderful pictures that it is well worth the trouble taken. The red corpuscles take a dark-red color and the nuclei of the leucocytes and of the nucleated red corpuscles take a deep carmine-violet. The protoplasm of the malarial parasite stains blue. The nucleus of the malarial parasite is seen to be made up of a peripheral unstained or achromatic portion and a central mass or cluster stained a deep carmine-violet, which is chromatin and is sometimes spoken of as the nucleolus.

We will now consider the different varieties of the malarial parasites as they appear at the various stages in their cycle of development.

*Tertian Parasite.*—The young tertian parasite when it has just entered the red corpuscle is nearly spherical or sometimes apparently ring-shaped. It has a dense rounded mass of chromatin surrounded by a thin peripheral achromatic zone. The parasite grows slowly at first, the protoplasm shows more and more irregularities in shape as ameboid movements become more active, but indications of the ring shape are often seen until the parasite nearly fills the corpuscle. After several hours pigment begins to appear in fine granules, which look brownish in color, probably on account of their minuteness. The pigment increases in amount and becomes coarser and apparently blacker. It is scattered throughout the protoplasm until near the time for segmentation, when it shows a tendency to be pushed to the periphery. The red corpuscle becomes progressively larger and paler throughout the cycle. The protoplasm of the parasite and the achromatic portion of the nucleus increase in size slowly for the first half of the cycle and more rapidly after that until near the time of segmentation. The chromatic portion of the nucleus remains unchanged for eight or ten hours, and then begins to break up into granules, which becomes finer and finer until they are invisible just before the process of segmentation begins. At this period, which is short in duration, no nucleus can be made out, but very soon fine granules of chromatin can be seen arranged in clusters and strands throughout the protoplasm. More or less pale areas can be seen in the protoplasm, but they seem to have no relation to the chromatin and it is difficult to say whether or not they represent the achromatic portion of the nucleus. The chromatin granules soon show a tendency to become aggregated in masses, at first about five or six in number. The chromatin then gradually loses its granular appearance and becomes arranged in sixteen or eighteen dense homogeneous masses, each surrounded by an achromatic zone and having a mass of protoplasm surrounding it or lying close to the side of it. The spaces between the separate segments become more and more evident and the pigment being left out collects in one or two masses near the center. The red corpuscle now ruptures and disappears and the new-formed segment is ready to begin an independent existence in some new red corpuscle as host.

*Quartan Parasite.*—The young quartan parasite, like the tertian, is made up of nucleus and protoplasm. The nucleus has the peripheral achromatic portion with chromatin in the center, but the chromatin is not in a solid rounded homogeneous mass as in the tertian, but is more or less irregular and often can be seen to be made up of separate granules. As the parasite grows the protoplasm and achromatic portion of the nucleus increase in size, the protoplasm showing fewer irregularities in shape than in the tertian. It is usually oval, but often stretches from one side of the corpuscle to the other like a band. The chromatin disintegrates more rapidly than in the tertian, and during a long part of the cycle is seen only as a cluster of dust-like granules. The containing corpuscle diminishes in size and stains more deeply with the eosin. The pigment is usually, but not always, coarse when it first appears, and it shows a tendency from the first to seek the periphery. The chromatin reappears, before segmentation, scattered through the protoplasm, and finally becomes aggregated in eight or ten masses, which are usually not so rounded and dense as in the tertian form.

*Estivo-Autumnal Parasite.*—Two different parasites have been described in the estivo-autumnal fevers, one having a cycle of twenty-four hours and the other of forty-eight hours. I have not been fortunate enough to see any case corresponding to the twenty-four hour type, so these observations refer only to the so-called malignant tertian fever. The young parasite is somewhat smaller than the young tertian or quartan parasite. The chromatin is less in amount and often becomes arranged in two small masses or a delicate strand. The rest of the cycle must be studied in material derived from the spleen by tappings during life or from the spleen or bone-marrow obtained at autopsy. The chromatin gradually disintegrates and reappears at segmentation as in the other forms. The number of segments varies from ten to twenty, or more. The chromatin appears in the segments in small round masses with a relatively small amount of protoplasm. Even at full growth the parasite does not more than one-third fill the corpuscle.

The changes hitherto described have been those seen in the sporulating generation, the mode of reproduction serving to propagate the species in the body of a single host. We will now consider the changes that take place in the sexual generation, the form of reproduction for the extension of the species to the body of a new host. This process can be best studied in estivo-autumnal fever, in which the gametes, or individuals capable of sexual multiplication, are often very numerous. They are the well-known crescentic bodies, and they can be divided into two classes according to the arrangement of the nucleus. In one the chromatin is in fine granules situated in a round, clear space at one end of the central clump of pigment. The pigment sometimes partially or completely surrounds the nucleus, and this is the type which, in the fresh blood, can be seen with the pigment in a ring. In the other type of crescent the chromatin is scattered among the pigment granules. The central portion of the crescent takes the blue protoplasmic stain more faintly than do the arms of the crescent. When the blood is taken into the stomach of the mosquito, interesting changes take place in the

crescents. The same changes take place when the blood is left a short time under a cover-slip and they may be studied by leaving the thin film of blood between two cover-slips protected from evaporation in a small closed chamber. After a longer or a shorter time the cover-slips are pulled apart and the blood allowed to dry. A series may be made in this way by leaving the cover-slips in contact for from five minutes to an hour. Very soon after the blood is drawn the crescents become spherical, and here again two different forms are found. One form is small, about half the size of a red corpuscle, perfectly spherical, and has pigment scattered throughout. It has at first an irregular mass of chromatin in the center, which later becomes arranged in four or five rounded masses near the periphery. From these masses develop the motile flagella. Each flagellum is made up of a central thread of chromatin, which often has a nodular mass at the distal end or somewhere along its course. Sometimes a blue-staining envelope of protoplasm can be seen. The flagella break loose from the central mass, leaving nothing but a little protoplasm and the pigment. The other form of spherical body is three or four times as large as the first and is usually not perfectly spherical, often having a somewhat triangular shape. The chromatin is in a single large mass surrounded by a clear zone and situated near the periphery. The pigment is arranged in a more or less perfect circle, which surrounds the nucleus. These bodies never give out flagella, and they probably represent the female or macrogametes. The flagellating body represents the male, and is called the microgametocyte. I have not been able to observe the actual penetration of the flagellum or microgamete into the macrogamete, but this has been seen by McCallum. Crows are often infected with halteridium, a parasite resembling that of malaria. The blood is sometimes crowded with the parasites and the process of fertilization can be easily observed. The fertilized female is an actively motile body, shaped like a long, narrow pear, often having a small rounded appendage at the blunt end, which contains the pigment. The nucleus is situated near the center, and is made up of an irregular mass of chromatin without any achromatic portion. The process of sexual reproduction in the tertian form is similar to that in the estivo-autumnal. The gametes in blood which has just been drawn are large intracorpuscular bodies, having a large nucleus composed of fine chromatin granules surrounded by an achromatic zone. They soon become extracorpuscular, and after fifteen or twenty minutes the microgametocytes flagellate like those of the estivo-autumnal parasite. The structure of the macrogametes and microgametes differs in no respect from that already described for the estivo-autumnal parasite.

To obtain material for the study of tissues in the malarial fevers, the autopsy should be made as soon after death as possible. The tissues may be fixed in Zenker's fluid or formalin. Alum-cochineal and borax-carmin are satisfactory stains, but I have obtained my best results by leaving the sections for three days in Ehrlich's eosin-hematoxylin mixture. Unfortunately all efforts to apply the Romanowsky stains to the study of sections have resulted in failure. Much information can be obtained from cover-glass smears of fresh tissue, especially of the spleen and bone-marrow. The smears are fixed and stained like blood preparations.

The changes in the organs may be classed as those occurring in each acute attack and those resulting from repeated acute attacks. The most marked changes are found in the spleen, liver, bone-marrow, brain, and alimentary canal. In the acute attacks the spleen is enlarged owing to hyperemia and the presence in the dilated vessels of the pulp, of free pigment, parasite-containing red corpuscles, and phagocytes. The pigment may be in fine granules, but is mostly in large rounded clumps left after segmentation. The polynuclear leucocytes contain pigment and more rarely broken-down parasites. There are many macrophages or large phagocytic cells, which are usually mononuclear and contain non-infected red corpuscles, fragmented, brassy, and parasite-containing red corpuscles, free parasites intact, and broken-down, pigment in blocks and granules, and leucocytes which sometimes show signs of degeneration. On the other hand, the nucleus of the macrophage often shows by poor staining and fragmentation that it is undergoing degeneration. The red blood-corpuscle carrying cells may be increased in number. The pulp cells may be swollen and contain parasites, pigment, infected and non-infected red cells and mononuclear leucocytes. The endothelial cells of the blood-vessels are phagocytic and often contain pigment, parasites and changed red blood-cells. There may be areas of necrosis, often showing an invasion of leucocytes; capillary thrombosis may be associated with these areas of necrosis. The parasites found in the spleen may be at all stages of development, but the segmenting forms are particularly found here, especially in the estivo-autumnal variety. The chronic malarial spleen may reach an enormous size, caused by the acute process repeated many times. The dilatation of the vessels leads to the formation of venous lacunæ. The necrosis of portions of the pulp is followed by hyperplasia of the surrounding tissue in an effort at repair. The pigment is partly deposited in the perivascular tissue, from which it is removed by the lymphatics, leaving a thickening of the perivascular connective tissue.

The liver in an acute attack shows an accumulation in the capillaries of phagocytes brought from the spleen. They are leucocytes and macrophages containing red cells, parasites and pigment. The endothelial cells of the liver capillaries are phagocytic and become swollen in places, and by thus obstructing the blood-current have much to do with the dilatation of the vessels of the liver, and probably also of the spleen. Kupffer's cells, lying between the capillary walls and the rows of liver cells, also take on phagocytic action. The liver cells contain yellow granular pigment, which differs chemically from the pigment in the parasites and in the large black masses in the phagocytes and tissues. It is derived from the remnants of hemoglobin left after segmentation and from a destruction of red cells, which is probably due only indirectly to the malarial parasite through the action of the poison. It gives the microchemical reactions for iron, which the true malarial pigment does not. Areas of necrosis of the liver cells can be made out, which may be due in part to capillary thrombosis, but in the main are caused by the toxic substances in the blood, and are similar to those due to the toxins of certain bacteria. As time goes on the dilatation of the capillaries persists and the pigmentation of the endothelial cells is more evident toward the periphery of the lobules. The perivascular lymph-spaces are enlarged; pigmented leucocytes and macrophages are seen outside the capillaries and there is an accumulation of free pigment in the connective tissue. Necrosis of hepatic cells has advanced. Still later, the pigment is more markedly accumulated at the periphery of the lobules. In the necrotic areas there is a regeneration of the liver tissue, the

new cells being arranged in cords along the necrosed cells. The pigmentation next becomes exclusively perilobular. There is irregularity in the size of the lobules, owing to the atrophy of some and the enlargement of others due to the formation of new liver cells. Finally there is a gradual diminution of the pigment, leaving dilatation of the vessels and a moderate hyperplasia of the perivascular connective tissue. Whether or not a true atrophic cirrhosis can be caused by malaria is not yet settled. Certainly it is not so frequent as was once supposed, and cirrhosis of the liver is not especially common in malarious regions, but from the analogy one would suppose that the areas of necrosis might well lead to cirrhotic changes, as has been shown by Flexner to be the case after similar necroses caused by bacterial toxins.

The red bone-marrow contains parasites in all stages of development in red cells and in macrophages. In the estivo-autumnal form crescents perfect and in process of formation are present in large number. These embryo crescents are sometimes also found in the spleen, but it is probable that the manufacture of crescents takes place for the most part in the marrow. In the early stages they are probably indistinguishable from the ordinary sporulating forms, but when the latter have about one-third filled the corpuscle they undergo segmentation. The young crescent, on the other hand, continues to grow until it has nearly filled the corpuscle, the chromatin remaining in fine granules. It preserves a spherical shape for some time and then gradually assumes the characteristic semilunar form.

In the lungs numerous pigmented phagocytic cells can be found in the capillaries, which are somewhat smaller than the macrophages seen in the spleen and liver.

An important characteristic of the estivo-autumnal fevers is the unequal distribution of the parasites in the different organs of the body. Often many of the capillaries of the brain are found crowded with segmenting parasites, and it is probable that the coma, convulsions, aphasia and sudden death in these cases are caused by the mechanical presence of these accumulations obstructing the blood-current in the capillaries. Small hemorrhages are sometimes observed. Another seat of localization is the stomach and intestines, where the capillaries of the mucous membrane may be filled with parasites, and areas of necrosis result. These are the "algid" cases, presenting a clinical picture resembling that of cholera.

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**Technique of Alimentary Rectal Injections.**—Boas mentioned at the International Medical Congress that he had found a permanent sound of great assistance in feeding by the rectum. The fluid is injected a drop at a time and as much as 500 c.c. of milk can be given in this way at one "meal," administering thus 1.5 to 2 liters of milk during the twenty-four hours. He warns, however, that the prolonged use of alimentary injections of any kind is liable to lead to serious syncope, and consequently they should only be applied when constant surveillance is possible.

## WHAT AMOUNT OF VISUAL DEFECT SHOULD DISQUALIFY IN RAILROAD SERVICE?

FRANK ALLPORT, M.D.

Professor Ophthalmology and Otology in Northwestern University Woman's Medical School; Professor Ophthalmology in Chicago Policlinic; Oculist and Aurist to St. Luke's, St. Joseph's and Wesley Hospitals, etc.

CHICAGO.

The title of this paper constitutes one of the unsettled points connected with the subject of the ocular and aural requirements of transportation employees. Considering the absolute lack of any such requirements whatsoever, obtaining in transportation circles, only a few years ago, it is quite surprising that so much progress has been made along these lines up to the present time. Only a few years ago, the quality of an engineer's eyes and ears was never brought into question, while now the importance of the health of these organs is a settled and incontrovertible fact. The cause of this revolution of sentiment is due to the persistent efforts of ophthalmologists, aurists and conscientious and capable railway surgeons. It must be admitted, however, that honest and sincere railroad officials have quite generally been reasonably quick to grasp the importance of the subject, and to realize the enormity of their own responsibility, in entrusting human lives, and property, to the keeping of employees physically incapable of piloting trains through hazardous situations. Besides this, the financial element has not been without its impression on the minds of railroad officials, for it soon became evident that notwithstanding the fact that ocular and aural examinations of employees entailed some additional expense, in the long run it was a distinctly economical measure, as it was much cheaper to entrust trains to men known to possess good eyes and ears than to pay for accidents, damage suits, etc., believed to have been due to defective conditions of these organs of special sense. In England, Holland, Sweden, Norway, Germany and other European countries a paternal government frames beneficent laws concerning ocular and aural requirements of railway employees. These requirements are not always what they should be, but nevertheless the government considers the matter of sufficient importance to regulate the subject, and that signifies much and presages better things for the future. In this country, there are still, it must be regretfully admitted, some railroads requiring no standards whatever of ocular and aural health of their employees, and whose officials dogmatically and stubbornly assert that determining examinations are unnecessary, as they know when a man has bad eyes or ears, without paying a doctor to disclose the fact. But while such officials are thus far behind the times, a very large majority of American railroads are operated under some kind of regulation and restriction, which clearly demonstrates that their managers are unable to close their eyes to the importance of the subject. These requirements are frequently most meager, unsatisfactory, unsafe and unscientific, but nevertheless they disclose an acknowledgment of the subject's importance in the minds of railway officials, and this is a victory that will expand and grow in the not distant future.

Certain points concerning eye and ear requirements for railway employees are quite well established and much time, therefore, need not be expended in their discussion. For instance, it is practically conceded by all interested parties, including even the employees them-

* Presented to the Section on Ophthalmology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

selves, that every one connected with the actual moving of trains should have good eyes and ears. The standards of excellence, and the means of investigation, are still under discussion, but the main fact as just presented, may be said to be settled. There is a practical unanimity of sentiment concerning color perception, and while concessions are frequently made to old employees with diminishing visual acuity, the standard of perfection regarding the color sense is maintained for all time, in all railroads paying any attention whatsoever to the subject. In order to ascertain if possible what is being done in railroad circles in matters of this nature, I have sent a letter of inquiry and a question blank to every railroad in the United States, Canada and Mexico operating over 100 miles of road. Two hundred and forty-four railroads were thus addressed, covering 205,638 miles of road. I have received replies from 64 roads, operating 90,950 miles of road, and I have tabulated these reports, and herewith present them in statistical form. It is to be regretted that all the roads did not reply, but such a fortunate result was, of course, not to be expected. Sufficient has, however, been learned to gather a reasonably good idea as to what representative railroads are doing in the way of eye and ear examinations, and I shall beg leave to briefly analyze the different points in the report.

I find that 53 out of 64 roads exact a systematic eye and ear examination of some kind. These examinations are undoubtedly by no means ideal in many instances, but it shows an active interest in the matter, and emphasizes the fact that but few roads have the assurance to face public and professional opinion by openly avowing their non-adherence to the trend of advanced thought and ordinary caution.

As to what men are subjected to such examinations, the replies are differently couched, but it is evident that at least 50 of the roads require such examinations of all men directly engaged in moving and operating trains, and in giving and receiving signals, such as engineers, firemen, conductors, brakemen, yardmen, signalmen, switchmen, etc.

One road acknowledges not making systematic examinations, but when they are made, from any reason, subjects such men as just mentioned to the ordeal. Another road under similar circumstances confines the examinations to engineers, firemen, conductors and brakemen. One road claims to make systematic examinations, but only engineers and conductors are tested. Another road only examines engineers, conductors, brakemen and firemen.

Concerning the question as to how these examinations are made, it will be seen that they are conducted exclusively by the railway surgeons in nineteen roads. Eighteen roads entrust the tests to a railway employee, such as a division superintendent, trainmaster, etc. Under this arrangement it is believed that only doubtful cases are sent to the railway surgeon. Upon six roads, doubtful cases are sent to an eye and ear surgeon. Nine roads entrust the whole matter to a regularly employed eye and ear surgeon, and three roads first have the men examined by the railway surgeon, who then sends doubtful cases to the eye and ear surgeon. In three roads, the examinations are all made by surgeons of railway relief associations.

Regarding regular systematic re-examinations there is great diversity of action. One re-examines every six months, four every year, fourteen every two years, four every three years, and two every four years. Eight re-examine whenever it seems advisable, as after a severe illness or injury, or after a railway accident, or when certain incidents bring into question the reliability of the eyes or ears of an employee. One road requires re-examinations merely at times of promotion, and another when a man arrives at the age of 50 years.

As to the standard required from examined men, there is also much diversity of opinion. Upon twenty-three roads it is claimed that perfect eyes and ears are required from new men, and that no concessions whatever are made to old employees. This statement seems rather broad and Utopian, and really hardly possible, unless old employees are constantly discharged to make place for younger and more perfect men, and the writer is unaware of any road where such practices exist, and would not approve of them if they were. A perfect standard should be required of men entering a service, but it would be unnecessarily cruel and inflexible to continually discharge old and trusted employees simply because their vision had dropped to 20/30, or had slightly impaired hearing, and whose experience and matured judgment make them extra valuable to the service. This statement it is believed, therefore, must be unconsciously somewhat highly colored, at least it is hoped that this is the case. In sixteen roads, while perfection is required of new men, various reasonable concessions are made to old employees. On one road the following requirements are made: Engineers and firemen shall possess a vision of 20/20 in one eye and 20/30 in the other. Conductors, flagmen, brakemen and switchmen must have a vision of 20/30 in one eye and 20/40 in the other. Other employees must possess vision equaling 20/40 in both eyes. Upon the road just referred to, it was not stated whether the requirements were for new men only, or whether it is the universal and constant standard to be perpetually observed. With one road the applicant must possess eyes and ears whose functions shall equal 75 per cent. of the normal function. One road requires perfect eyes and ears for firemen. All the employees must possess vision equaling 20/20 in one eye and 20/50 in the other. Another road sets the standard of vision at 20/30 and declares that a whisper must be heard at twelve feet. One road requires a combined vision of 20/20, and that neither eye shall drop below 20/70. Another road requires of engineers, firemen, signal-tower men and switchmen vision of 20/20 in one eye and 20/30 in the other. All other men must have 20/30 in each eye, or 20/20 in one eye and 20/50 in the other. Upon two roads employees are retained who still possess vision equaling 20/40 in both eyes, and when the hearing is half lost in one ear, provided the other ear is perfect.

It is interesting to notice under what circumstances a man is considered an old employee by different roads. One road considers a man an old employee when he is once installed into actual service; another after he has worked one year; another after two years of service. Six roads require three years of service; eight roads five years; one road six years; six roads two years, and two roads fifteen years.

Concerning the use of glasses, when on duty, it is feared that the question has been misunderstood. I meant to ask the question as to whether glasses were permissible in actual service, when their use was necessary to bring vision up to a proper distant standard; but owing to so many roads (45) returning an affirmative reply, I fear the question was interpreted to refer to the use of glasses for reading when on duty. Seven roads, however, specifically state that old employees may wear distance glasses, if glasses will enable them to reach

# Statistical Report of Eye and Ear Requirements of Railway Employes

By FRANK ALLPORT, M. D.
Of CHICAGO, ILL.

| No. | Railroad. | Miles. | Are Eyes and Ears Systematically examined. | If so, what class of employes? And do you require same standard for all classes. | Are such examinations made by an Eye and Ear Surgeon, a General Surgeon, or by some R. R. Employee? | Do you require reexaminations from time to time and if so, at what interval or under what circumstances? | Do you require perfect vision, color sense and hearing in new employees? And what concession do you permit from a perfect standard in the case of old employes? | How long must a man work on your road before you call him an old employee? | Do you permit defects to go by your glass when on duty? |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Louisville Henderson & St. Louis. | 180 | Yes. | All classes in Transportation Department. | By General R'y Surgeon. | No. | Yes. None. | No rule. | Yes. |
| 2 | Ohio Central. | 525 | Yes, but not scientifically. Men required to pick out different colored worsteds. Other tests very inaccurate. | | By Superintendent or his agent. | No. | Yes, as before stated. | No rule. | Yes. |
| 3 | Freemont, Elkhorn & Mo. Valley. | 1408 | Yes. | All employes in train and yard service. Same standard for all. | General R'y Surgeon, also by Eye and Ear Surgeon. | | | No rule. | Yes. |
| 4 | Buffalo, Rochester & Pittsburgh. | 475 | Yes. | Engineers, Firemen, Conductors, Flagmen, Brakemen, Switchmen, Yardmaster, Operators, Section Foremen, Foremen of Bridge gangs, etc. | By Trainmaster. | Once a year. | Engineers and Firemen must have 20/20 in one eye, 20/30 in the other. Conductors, Flagmen, Brakemen, Switchmen must have 20/30 in one eye and 20/40 in the other. All others 20/40 in both eyes. | No rule. | Yes. |
| 5 | Pittsburgh & Lake Erie. | 180 | Yes. | Train Dispatchers, Telegraph Operators, Conductors, Brakemen, Enginemen, Firemen, Switchmen, Crossing Watchmen and Section Foremen. | General Surgeon and approved by Company Eye and Ear Surgeon. | Every two years. Re-examination made by Company Eye and Ear Surgeon. | Yes, old employes allowed to wear glasses, if defect in vision can be corrected by them. | No rule. | Yes. |
| 6 | Hocking Valley | 346 | Yes. | Conductors, Engineers, Brakemen, Firemen and Operators. Same standard for all above men. | General Surgeon. | Every three years. | Require Perfection in all new employes. No rule about old employes. | Fifteen years. | Yes. |
| 7 | New York, Chicago & St. Louis. | 523 | Yes | All who use and observe signals. | Primarily by Div. Supt, special cases by special surgeon. | Yes, every two years, or oftener if men seem to require it. | Yes, no concessions. | Ten years. | Yes. |
| 8 | Long Island. | 379 | Yes | Trainmen, Enginemen, Switchmen, Towermen, Flagmen. | General Surgeon. | Every two years. | Yes. | Three years. | Yes. |
| 9 | Rock Island & Peoria | 123 | Yes. | Engineers, Firemen, Brakemen, Baggagemen. | Both. | If thought necessary. | | | Yes. |
| 10 | Fitchburg. | 450 | Yes. | All men in train service having to do with signals. | First by employee. Then by Specialist if necessary. | Every two years. | Yes, if vision can be made satisfactory by glasses, they may be used. | | Yes. |
| 11 | Wabash | 2275 | Yes. | Employes engaged in moving trains. | General Surgeon. | No rule. | Yes. No concessions. | | Yes. |
| 12 | Grand Rapids & Indiana. | 590 | Yes. | Engineers, Firemen, Conductors, Brakemen, Switchmen and Baggagemen. | Eye and Ear Surgeon. | Every three years. | Yes. | | Yes. |
| 13 | Michigan Central | 1662 | Yes. (Eyes) | Men in engine and train service. | Railroad officer. | If defect is noticed. | Yes. No Concession. | | Yes. |
| 14 | Omaha, Kansas City & Eastern Ry. | 315 | Yes. | Engineers, Firemen, Conductors, Switchmen, Brakemen. Same standard for all. | Eye and Ear Surgeon. | No regular re-examination. | Yes. No concessions. In case of defect other employment is given. | One year. | Yes. |
| 15 | Central Vermont | 513 | No. | Men in train and yard service examined by Transportation Department officers. | | | | | |
| 16 | Florida Central & Peninsular. | 940 | Yes. | All men engaged in train service. Same standard for all. | Eye and Eye Surgeon. | Re-examination annually, oftener if necessary. | No concessions. | | Yes. |
| 17 | Yazoo & Mississippi. | 969 | Yes. | All men engaged in train service, including train dispatchers and telegraph operators. | General Surgeon. | No regular re-examinations. | Yes. Some concessions with old employes. | Five years. | Yes. |
| 18 | Minneapolis & St. Louis. | 504 | No. | Engineers, Firemen, Conductors and Brakemen. | Train Master. | | Yes, for new men. | No rule. | Yes. |
| 19 | Chesapeake & Ohio. | 1376 | No. | | | | We require perfect vision and hearing in all employes. | | Yes. |
| 20 | Rio Grande, Sierra Madre & Pacific. | 160 | Yes. | All whose duties require them to use signals, flags, lights, etc. | By General Surgeon and one other appointed by Government. | No. | No exceptions. | Three years. | |
| 21 | Cincinnati New Orleans & Texas Pacific | 336 | Yes. | Conductors, Engineers Firemen, Brakemen and Operators. All in same manner. | Employe | We do, every three years | Require perfect vision, color sense and hearing in new employes. Color test made by requiring men to pick out different colors. | | Yes. |
| 22 | Chicago, Terminal Transfer. | 208 | Yes. | Train and Enginemen. | By Supt. or Train Master. | Not unless we have reason to believe employes eyesight or hearing is failing. | Require men to be able to distinguish colors of our signals and to have good hearing. | | Yes. |
| 23 | Wheeling & Lake Erie. | 462 | Yes. | Engineers, Firemen, Conductors, Brakemen, Yard Masters, Station Agents, Telegraph Operators. All persons in any way concerned in the movement of trains or handling of signals. Same standard for all classes. | By Division Superintendent. | Every two years. | An average of 75% is required. When applicant stands less than 50% in sight, color sense or hearing, though he be perfect in the other two he is rejected. | Ten years. | Yes. |
| 24 | Ft. Worth & Rio Grande. | 142 | No. | | | | | Five Years. | |
| 25 | Lehigh Valley | 1402 | Yes. | All train and yard employes. | First by instructed employe. Doubtful cases by Chief General Surgeon. | Re-examinations at stated intervals required for heavy users of tobacco or for progressive ocular diseases. | New employes must be perfect. Old employes are passed on 20/20 one eye, 20/40 in other, with good range and field. | About ten years. | Yes. |
| 26 | Ohio Southern | 215 | Yes. | All engaged in giving or interpreting signals. | By Railway Employe. | General re-examination every two years. | New men required to be perfect. Some concessions to old employes. | Ten years. | Yes. |
| 27 | Baltimore & Ohio. | 2205 | Yes. | Same standard for all engaged in giving or interpreting signals. | By Medical Examiner of Relief Department. | Every two years in Ohio, in other states, as indicated by Gen. Mgr. | Perfect eyes and ears of Firemen, when entering service. All other train men must have normal vision in one eye and 20/30 in the other. In case of old employes, each case is considered on its merits. | No rule. | Not in case of train men. |
| 28 | Philadelphia & Reading & Atlantic City. | 1060 | Yes in certain classes. | Engineers, Firemen, Crossing Watchmen, Yard Corps, Brakemen, Yard Masters, Conductors, Train Baggagemen, Car Runners, Car Couplers and Engine Wipers. There are two standards for acuteness of vision, otherwise the same standard. | By Relief Association. | Every three years. | (a) Yes, except that two standards for acuteness of vision are required, according to nature of employment, viz: Engineers, Firemen, Crossing Watchmen and Signal Corps, who are required to be normal in both eyes, and the others mentioned in answer to question No. 8 are required to be normal in one eye and 5/6 in the other.<br>(b) Men whose deficient acuteness of vision is corrected by glasses as as to be normal, may be employed as conductor, passenger brakemen, and employment on switch engines and in towers as levermen, towermen, train director and starter. Men who come up for re-examination for the position of enginemen, who, on account of advancing years, have defective range of vision, may be employed as such, if they have glasses which correct their deficiency. Their acuteness of vision, however, must without glasses be normal in one eye and not less than 5/6 in the other. Firemen must always be normal in both eyes, without glasses, except for shifting service. | Five years. | Yes. |
| 29 | Santa Fe Pacific. | 818 | Yes. | All engine, train and yardmen, crossing watchmen and signal towermen must be examined. Same standard for all. | Eye and Ear Surgeon. | Re-examinations every two years. | 1st—Yes. 2nd—Certain concessions are made to old employes where there is no danger. | No Rule | Yes. |
| 30 | Chicago and Eastern Illinois. | 648 | Yes. | Engineers, Firemen and Trainmen. | R. R. Employe. | Yes once a year. | Require Perfection. | Five years. | No not on train or engine service. |
| 31 | Cincinnati & Northern. | 402 | Yes. | Engineers and Conductors. | Eye and Ear Surgeon. | Every two years. | Perfection required. | Five Years. | Yes. |
| 32 | Louisville Evansville & St. Louis | 1136 | No. | | | | | Fifteen years. | Yes. |
| 33 | Atlantic Valdosta and Western. | 114 | No, new road, but owing to your circular will have examinations made at once | | | | | | |
| 34 | Cincinnati Portsmouth & Virginia | 215 | No. | | | | | Three years. | Yes. |
| 35 | Atlantic Coast Line. | 1716 | Yes. | Engineers, Conductors, Brakemen and all employes using flag and lantern signals. All employes of transportation service. | Medical Examiner and Relief Department. | Not yet, but probably will soon. | Vision must equal 20/30. Hearing must equal 12 feet for whispered voice. | No rule. | |
| 36 | Mobile & Ohio. | 882 | Yes. | All engaged in transportation service and giving and interpreting signals. Station agents, Telegraph Operators, Station Baggagemen and Crossing Flagmen. Will be accepted with 20/40 of vision in one eye and with 20/30 in the other, or with 20/30 of vision in each eye. | Railway Surgeon. | | Yes, for new employes. | | |
| 37 | Denver & Rio Grande | 1666 | Yes. | All men engaged in train service and who have to do with giving or interpreting signals. Same standard for all. | Usually by the Eye and Ear Surgeon. Never by a non-medical man. | Re-examination on promotion and where suspicion of sight or hearing is aroused. | Perfect eyes and ears required in both old and new employes. | Not considered. | Yes, in special cases. |
| 38 | Minneapolis St. Paul and Sault Ste. Marie. | 1253 | Yes. | Same standard for all employes and all are required to be examined. | On entering service by Railway Surgeon. On promotion to an engine by Eye and Ear Surgeon. | Once in two years by Eye and Ear Surgeon. | Yes. Not much concession to old employes and none when on engine. | Seven to ten years. | Not on engine nor train service. |
| 39 | Mexican International. | 744 | Yes. | Conductors, Brakemen, Engineers and Firemen. | Railway Surgeon. | No. | Require good eyes and ears and make no concessions. | Five years. | Only for reading |

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| 40 | Grand Trunk | 4186 | Yes after May 1, 1900 | Enginemen and all trainmen. Same standard for all. | General Surgeon. | Not determined. | Not determined. | Ten years. | |
| 41 | Southern Railway. | 6415 | Yes. | Those employed on train service. | Railway employe. In case of doubt the Railway Surgeon. | No. | Perfection in all. | No Rule. | |
| 42 | Galveston, Harrisburg & San Antonio. | 1064 | Yes. | Same standard for all men connected with operating department. | Railway Surgeon. | Not Yet. | Yes. | Two or three years. | Yes. |
| 43 | Texas & New Orleans. | 343 | Yes. | Same standard for all men connected with operating department. | Railway Surgeon. | Not yet. | Yes. | Two or three years. | Yes. |
| 44 | New York, Texas & Mexican & Gulf Railway, Texas & Pacific. | 225 | Yes. | Same standard for all men connected with operating department. | Railway Surgeon. | Not yet. | Yes. | Two or three years. | Yes. |
| 45 | Norfolk & Western. | 1581 | Yes. | All connected with train service. Same standard for all. | First by Division Supt. These reports are sent to Company Surgeon. Defectives are then sent to Eye and Ear Surgeon. | Yes, every two years, and oftener if necessary. | Require perfection. Some concessions made to old employes, especially those who have been injured in the Company's service. | No rule. | Yes, except firemen or brakemen. |
| 46 | Canadian Pacific. | 7251 | No. | | | | Do not employ or continue in service any man known to have defective eyes or ears. | No rule. | Yes. |
| 47 | Cincinnati, Chicago & St. Louis. | 2300 | Yes. | All connected with train service. Requirements vary in accordance with responsibility of duties. | By railway employe. Reports sent to Eye and Ear Surgeon. Doubtful cases are sent to Eye and Ear Surgeon. | Every two years and when deemed necessary. | Standard varies in accordance with the responsibilities of duties. | | Yes. |
| 48 | Chicago & Northwestern | 5096 | Yes. | All engaged in operating trains or in giving or interpreting signals. Requirements vary in accordance with responsibilities. | By Railway Surgeon. | No. | Require perfection on entering service. Some concessions are made to old employes. | No Rule. | Yes. |
| 49 | Chicago, Rock Island & Pacific. | 3562 | Yes. | All engaged in train service and in giving and interpreting signals. Same standard for all. | Usually by Eye and Ear Surgeon. | Every four years and when deemed necessary. | Require combined vision of 20-20. Neither eye must have a vision of less than 20-70, which must be reached without glasses. Color sense and hearing must be perfect. No concessions. | | No, except for reading. |
| 50 | Chicago, Rock Island & Texas. | 121 | Yes. | All engaged in train services and in giving and interpreting signals. Same standard for all. | Usually by Eye and Ear Surgeon. | Every four years and when deemed necessary. | Require combined vision of 20-20. Neither eye must have a vision of less than 20-70, which must be reached without glasses. Color sense and hearing must be perfect. No concessions. | | No, except for reading. |
| 51 | El Paso & North-Eastern Railway. | 204 | No. | | | | | | |
| 52 | Vandalia Line | 507 | Yes. | All engaged in train service and in giving and interpreting signals. Same standard for all. | By employe. If defect is found, man is sent to Eye and Ear Surgeon. | Once a year. | Perfect eyes and ears in new men. Old employes may wear glasses if defect can be thus overcome. | No rule. | Yes. |
| 53 | Chicago and Great Western. | 1023 | Yes. | Engine and train menand yard men. | Railway employe. Doubtful cases sent to Company Surgeon or Oculist. | Yes, as men in the service get to about fifty years of age. | Perfect in new men. 70% in old employes. | Six or seven years. | No. |
| 54 | Mexican Central | 1955 | Yes. | All in train service. Same standard. | General Surgeon. | Yes, when defects are suspected. | Require perfection. | No Rule. | No. |
| 55 | Oregon Shore Line. | 1476 | Yes. | All men in operating Department. | Eye and Ear Surgeon. | Every two years. | Yes, concessions made to old employes, where such concessions are not dangerous. | Two years. | |
| 56 | Southern Pacific. | 5783 | Yes. | All train and station men. Practically same standard for all. | General Surgeon. | No. | For Engineers, Firemen, Signal tower men, Switchmen 20-20 in one eye and 20-30 in the other is required, for all others 20-30 in each eye or 20-30 with one eye if the other is 20-20. | All actual employes. | Yes. |
| 57 | Pennsylvania Lines West of Pittsburg. | 2672 | Yes. | All having to do with signals. | Railway employe, supervised by Company Oculist. | Every two years. | New employes must be perfect. Old employes allowed some concessions according to position held. | | Yes. |
| 58 | Colorado & Puget Sound S. R., Pacific Coast R. R., Port Townsend R. R. and Seattle & Northern R. R. | 210 | Yes. | Conductors, Brakemen, Yardmen, Engineers and Firemen. | By Company General Surgeon. | Re-examinations not required unless circumstances require them. | Perfection for new men entering train, yard or engine service. | Five years. | Yes. |
| 59 | New York, Philadelphia & Norfolk. | 112 | No. | | Nothing but a general superficial examination is made such as by a careful personal scrutiny. | No. | As before stated. | No rule. | Yes. |
| 60 | Atchison, Topeka & Santa Fe. | 4736 | Yes. | Men who give and receive signals. | Always by a surgeon, sometimes by Eye and Ear Surgeon, sometimes by local Surgeon. | If examination is not satisfactory, the man may be ordered to report again in six months. | Perfect for red and green. One eye must be perfect and the other not less than two-thirds. | | Yes, when reading. |
| 61 | Wisconsin Central. | 858 | Yes. | All classes of employes connected with train service. | By General Surgeon. | Every six months, or when deemed necessary. | Yes, as to new employes. If old employes can have sight made normal by use of glasses we allow it. | No rule. | Yes. |
| 62 | Great Northern | 4969 | Yes. | All employes in train service and Section Foremen are required to pass visual and aural examinations. Operators examined on eyesight. Same standard for all. | By employe and submitted to Surgeon for approval. | No, unless there are indications of defect. | Yes, old employes permitted to wear glasses if vision can be made normal by their use. | Five years. | Yes, as before given. |
| 63 | Illinois Central. | 3780 | Yes. | All engaged in operating trains or in giving or interpreting signals. Requirements vary in accordance with responsibilities. | By Railway Surgeon. | No. | Require perfection on entering service. Some concessions are made to old employes. | No rule. | Yes. |
| 64 | Gulf, Colorado & Santa Fe | 1088 | Yes. | All Train and Engiemen, Yardmen, Agents and operators. | By Railway Surgeon. | Only when some defect is suspected. | Perfection required in new men. In old employes, vision if 20-40 passes. Perfect hearing in one ear and ½ in the other. | When once in service. | Yes. |
| Total Miles | | 90,980 | | | | | | | |

the proper standard. My personal views on this matter are materially changing by experience and observation. I am fast coming to believe that the standard of distant vision by a railway employee actively engaged in operating a train should be reached without glasses. It certainly may well be questioned whether dirty, foggy and smoky glasses are safe adjuncts to vision before the eyes of an engineer or fireman, who peers into an uncertain atmosphere, with a train going at the rate of fifty miles an hour. The writer knows of instances where glasses are laid aside under such circumstances, the employee feeling that while his own vision is poor, it is better unaided than when encumbered by glasses such as have just been described. The question of glasses breaking or being mislaid during the progress of a trip must not be forgotten, and it certainly is no argument in favor of such a train employee wearing glasses.

One road says that glasses on a train may be used only when reading. This is rather an unnecessary remark, as it surely is a necessity to allow men to use reading glasses on trains, as most orders come in written or printed form, and must often be read by a man of 45 or 50 years of age or more, who can not possibly read without glasses. Seven roads specifically state that they do not allow distance glasses during train duty when such glasses are necessary to bring vision up to the proper standard.

Thus it will be seen that on all points bearing on the visual and aural capacity of railroad employees there is much diversity of opinion on the part of the employer and the employed, and also on the part of railway surgeons and eye and ear surgeons themselves. This is unfortunate, and precludes the probability of meeting on mutual ground, and formulating rules that shall be safe, and yet not extreme nor Quixotic.

I beg leave to submit some practical suggestions along these lines that appear to me to be just and equitable. If members of the Section entertain different views, it is to be hoped they will be mentioned, and that a discussion will enable the Section to formulate principles regulating this matter, that will be a true reflection of the opinion of a representative body of eye and ear surgeons, and which it is hoped will have some influence in molding the regulations on this important subject.

1. The essential principle to be advocated is that railroad corporations shall require a scientific and correct entrance examination of the eyes and ears of those employees at all to be concerned with the active operating of trains, or in giving or receiving signals.

2. Such examinations are best made by regularly appointed eye and ear surgeons. But if such a course is not deemed advisable, the company surgeon, aided by his medical assistants, may conduct them, with the understanding that all doubtful cases shall be sent to a regularly appointed eye and ear surgeon. Non-medical men shall never conduct the examinations.

3. There shall be two general standards of visual and aural requirements, viz., those for new men hoping to enter the service, and to be actively engaged in the operation of trains, and in giving and receiving signals, and secondly, those men engaged in similar work, who have been uninterruptedly in a company's service for five years, and who have, therefore, a right to be called old employees.

4. New men shall be required to possess perfect color sense. They shall also have a vision of 20/20 in each eye, without glasses, and have healthy eyes, and not over two diopters of hypermetropia. They shall also hear the whispered voice at 20 feet in a quiet room, and have healthy ears.

5. For purposes of graduated requirements old employees shall be subdivided into two classes as follows:

Class A.—Engineers, firemen, conductors, brakemen, switchmen, signalmen, switch tenders, and engine dispatchers.

Class B.—Track foremen, bridge foremen, crossing flagmen, bridge tenders, gatemen, train baggagemen, telegraph operators, station agents, and station baggagemen.

Employees enumerated in Class A shall not be retained in such positions if vision sinks below 20/30 in one eye and 20/40 in the other, or if the whispered voice cannot be heard in a quiet room at 15 feet by one ear and 10 feet by the other. Employees enumerated in Class B shall not be retained in such positions if vision sinks below 20/40 in one eye and 20/50 in the other, or if the whispered voice can not be heard in a quiet room at 10 feet by both ears. Employees, and especially engineers and firemen enumerated in Class A, must reach the visual standard without glasses and will not be allowed to wear distance glasses when on duty. Employees enumerated in Class B may reach the visual standard with glasses, and will be allowed to wear glasses when on duty, and will be required to do so if the wearing of glasses is necessary to bring vision up to the proper standard. All the employees shall have perfect color sense.

6. Re-examinations shall be made of all men every three years, and after a severe illness, or accident, or any occurrence which seems to cast doubt on the visual or aural capacity of an individual. Re-examinations shall also be made more frequently on men known to be excessive users of tobacco, or to be suffering from syphilis, albuminuria, diabetes, or acute or chronic eye and ear disease. Men shall always be examined before promotion.

7. Men known to be excessive users of liquors shall not receive employment.

It would seem as if these rules were sufficiently comprehensive and liberal to be adopted by any railroad; at the same time they are believed to be sufficiently stringent to exclude dangerous eyes and ears from the service. They will, of course, exclude a certain proportion of old employees from their accustomed occupation, but this is of small moment compared to hazarding the lives and property of the public by the retention in service of physically incompetent men. Railroads can always, if they choose, lessen the disappointment of an old employee, by transferring him to some other and less hazardous position, with a liberal salary.

I desire to emphasize what was said in Rule 2 concerning the appointment of examining eye and ear surgeons. I believe it is best that such examinations should be made directly under the supervision of eye and ear surgeons. Ophthalmology and otology have advanced with such strides that no general surgeon can keep well informed on these subjects. An examination of the color sense is by no means the simple matter that some would have us believe, and examinations for vision, the field of vision, and ocular and aural functions and diseases require the services of one especially skilled in such matters. The argument is frequently used that in large railroad systems, the work would be too ponderous for any one man. This is true, but now-a-days skilful oculists and aurists may be found in every city of a few thousand inhabitants, and appointments in different places might be made, and the work properly performed, with but little expense. However, I have no desire to draw the lines too tightly on this subject, and I believe that general satisfaction to all interested in this subject would be accomplished, if such examinations were *never made by non-professional men,* but by the general surgeon, or his medical assistants, and that an eye and ear surgeon should be appointed on each road, who should outline the details of these examinations and to whom all doubtful cases should be promptly sent.

Referring to Rule 3, that treats of perfection required in new applicants, it would seem as if there could scarcely be a doubt as to the advisability of rigid requirements for those hoping to become employees, and yet some ultrapractical railroad men and general surgeons believe that perfect eyes and ears are unnecessary requisites for such applicants. The world is full of healthy men possessing perfect eyes and ears; therefore, while a railroad is under no possible obligations to primarily employ a man, why should they not secure men of this standard, and at least start right. This is not only an act of justice to the road, which certainly possesses the right to demand the highest physical standard in an entering employee—for it is expected to make many physical concessions later on—but it is also an act of justice to the man, who enters railroad service with hopes of advancement in mind, but whose ambitions may be harshly dissipated later in life, when eyes and ears, barely sufficient to admit him to service under an inferior standard, diminish in power, until, at a crucial period in the man's life, when about to realize his hopes, these organs prove incapable of standing the required test. While, therefore, I am heartily in favor of making all possible concessions to old employees at all compatible with safety, believing that age, experience, familiarity with routes, judgment, etc., compensate to a degree for somewhat defective eyes and ears, I am positive that the standard should be perfection for those applicants hoping to enter the service of a railroad corporation for the first time.

Concerning Rule 4, and the possession of an applicant of more than two diopters of hypermetropia. This is a point that is rarely taken into consideration in initiatory examinations, and yet the suppressed hypermetropia of early manhood often plays an important rôle later in life, in the exclusion of old and trusted employees from active duty. Ophthalmologists are familiar with the fact that considerable hypermetropia may be suppressed by an active ciliary muscle during youth, and a vision of 20/20 or more be apparent during a superficial examination. But railway officials and surgeons are perhaps not so well acquainted with these data, and with the fact that in later life, with the decadence of ciliary activity, the lack of visual power becomes manifest and the use of glasses necessary to reproduce normal vision. Therefore, it would certainly seem desirable that no man should enter railway life expecting to be engaged in active transportation service.

possessed of such a handicap. This point would seem to be one of the strong arguments in favor of ocular examinations being made by oculists, as one unfamiliar with such work would find the detection of latent hypermetropia rather difficult to accomplish.

Concerning Rule 5, it seems eminently proper that from an ocular and aural standpoint, employees should be divided into two classes, according to the responsibilities of their duties and their prospective occupations by promotion. An effort has been made to do this under the two classes A and B. Those old employees in Class A, owing to the importance of their positions, are never allowed to sink so low in the requirement scale as those of Class B. It certainly seems no more than just to the safety of the traveling public, that the eyesight of an engineer, fireman, conductor, etc., should not be lower than 20/30 in one eye and 20/40 in the other; that this vision should be obtained without glasses, that are objectionable for the reasons previously mentioned, and that the hearing should not be less than the perception of a whisper by one ear in a quiet room at 15 feet, and by the other at 10 feet. At the same time an old employee in Class B, such as a baggageman, telegraph operator, station agent, etc., would undoubtedly be perfectly safe with the requirements already enumerated.

Concerning the aural capacity of old employees, it seems inadvisable to make rules of excessive stringency covering this point. Very little work in transportation service is done by the voice; it is almost all done by signals, and the possession of good hearing is often a matter of no importance whatever. For instance, conversation on an active engine is practically impossible, and it is not inconceivable that a deaf engineer or fireman might be quite capable of being an efficient employee. Still, such laxity is evidently undesirable, and it is believed that the limits referred to under Rule 5 will be just to all concerned. The Railroad Commission of Germany declares unreservedly that as long as a man is capable of hearing an ordinary conversational voice, he is quite competent to work on an engine; and as engineers, firemen, etc., who work constantly amid the noise, dirt and exposure of an engine, which becomes emphasized on mountainous and tunnelled roads, are quite apt to lose their acuteness of hearing, somewhat after the manner of boiler-makers, every possible concession should be made to them.

Referring to Rule 6, and the subject of re-examinations, it may be said that if a railroad deems it at all advisable to carefully test men on entering the service, they should consider it equally necessary to enforce re-examinations at stated intervals, of which three years seems to be a fair compromise. It is unnecessary to dwell on the fact that serious eye and ear defects are liable to occur in much less time than three years, but of course some chances must necessarily be taken, and it is believed that, with enforced re-examinations every three years, and whenever through accident, illness, overuse of tobacco, promotion, etc., such re-examinations are thought advisable, reasonable safety will be assured the traveling public, as far as the eyes and ears of railway employees are concerned.

I desire to mention two practical points in testing vision for railway purposes, that are not always observed, and that have much bearing on the subject. One is to see that applicants and employees are tested with a considerable variety of test cards, as men become familiar with a limited number, and sometimes memorize them, and pass such knowledge on to their comrades. Another point is to have the test cards always lighted by uniform and ample illumination. For instance, I can always secure a little better vision in my private office, where the test cards are illuminated by shaded electric lights, than a railroad surgeon can in his office, where such conditions do not prevail, and have several times had my results questioned, probably on this account. Besides this, test letters are by no means of uniform size, and I believe that this element may also have considerable to do with unsatisfactory, unstable, and inharmonious results.

In closing this article, I beg leave to remind the Section of the great importance of the subject, for it has been estimated that there are in this country upward of 200,000 miles of railroad, employing about 900,000 men. In the year 1899, nearly 500,000,000 passengers were carried, and nearly 800,000,000 tons of freight. In the same year nearly 2000 employees were killed, and about 32,000 injured. Nearly 4700 passengers were killed and 6200 injured.

In the face of such facts, no apology is needed for honest and persistent efforts tending toward the uniform adoption of proper and scientific requirements from railroad employees by railroad employers.

### DISCUSSION.

Dr. C. H. Williams, Boston—I am sorry Dr. Allport's list does not include three of the large railroad systems where some of the most careful examinations of the vision and color-sense of employees are now being made. I refer to the Pennsylvania lines east of Pittsburg and Erie, concerning which Dr. Thomson can tell us later, the Chicago, Burlington & Quincy system and the New York, New Haven & Hartford system. For about six years, from 1889 till 1895, I was medical director of the Burlington system, and, among other duties, had charge of putting in operation the tests they are now using, and a little more than a year ago I was requested by the New Haven road to instruct their examiners and to draw up a set of rules to govern these examinations, so that I am familiar with the work which is being done on those two roads. On the Burlington system the tests are made by the physicians of their Relief Department, who have been carefully instructed in regard to the methods to be followed. All material for the tests is furnished by the company, to ensure uniformity, and is inspected from time to time to make certain that it is kept in good condition. The report of every examination is sent to Chicago for final approval by the medical director, which serves as a check on the thoroughness of the work, and any doubtful cases are referred to him.

On the New Haven system the examinations are made by employees selected by each division superintendent. These examiners are first tested to see if their vision, color-sense and hearing are up to standard; they are then carefully instructed by an expert in regard to the methods of making these examinations and are furnished with a set of rules to govern the tests and a set of blanks for recording the results, all these reports being sent to the office of the general superintendent for file, and any doubtful cases being referred to an expert for further tests.

On the Pennsylvania system these tests are also made by non-medical men, and although I believe it is better, where possible, to have these examinations made by trained physicians, and to have them include not only the tests for vision, etc., but also the heart, lungs and general physical condition, especially of men applying for work; yet, when this can not be done, the vision tests can be made very satisfactorily by intelligent men selected from among the employees, provided they are properly instructed, are furnished with suitable apparatus and rules to govern the work, and some provision is made to refer any doubtful cases to an expert. With a well-devised system the examination by trained employees is likely to give much better results than when made by physicians who have had no

special training for this work, or who are not supplied with suitable apparatus for making the tests.

The instructions of the New Haven road at present provide for the following standards of acuteness of vision: "Class A, enginemen, firemen, towermen and drawer tenders, on entering the service or promotion, 20/20 in each eye without glasses. Class B, conductors, brakemen, switchmen and others who are required to pass a visual test, on entering the service or promotion 20/20 in one eye and not less than 20/40 in the other, without glasses." For the re-examination of the men in the different branches of the service at stated times a different standard is required; for "Class A, not less than 20/30 with both eyes open without glasses," and for "Class B, not less than 20/40 with both eyes open without glasses."

The acuteness of vision is tested not only with cards on which are printed letters subtending the standard angle of five minutes, but also with some cards which I prepared for the New Haven road, on which are printed small semaphore arms of such size that the length of the arm at twenty feet subtends a visual angle of five minutes, and the width of the arm an angle of one minute; this corresponds to the apparent size of a standard semaphore arm when seen at a distance of 2600 feet, which would be sufficient for railroad work. It is found, by using these cards, that men can read easily the position of the semaphore arms at 20 feet who have only 20/30 of average normal vision, for the position of the signal at danger (horizontal) or at safety (inclined) can be seen much more easily than the difference between such letters as O, C, D, etc., and a man who has 20/30 or better when tested by the letters can read easily the signals at the required distances. In fixing the above standards of vision the object has been to require for entrance to the service, or for promotion, in those positions where good eyesight is essential, such a standard as will ensure 20/20, or the average vision of normal eyes, and for men in other positions, to require this in one eye and at least one-half of this in the other. For the re-examination of men in the service who have become familiar with their duties, and by reason of their experience are more valuable employees, a lower standard has been fixed which was considered safe for a continuation of such work. In connection with the test for vision, I wish to say a word in regard to the necessity for using both the lantern, properly arranged, and the colored worsteds, in making the test for color-sense. We must keep in mind the fact that both in railroad and marine service it is necessary not only to distinguish colors which are spread over a considerable surface, as in a signal flag, but also to read the color of a distant signal lamp which is focused on a very small central portion of the retina, and a number of cases are found where the color of flags or test-worsteds can be seen well enough to pass the tests, but where the central area of the retina is impaired in its color-perception over a space large enough to prevent it from seeing accurately the color of a distant signal lamp. Such a test has been used for many years in Holland, and for more than a year the New Haven road has been using an improved lantern which I designed for them, which has been very satisfactory, and at a later session of this meeting I hope to have the pleasure of showing you the latest form of this lantern.

DR. ALBERT E. BULSON, Jr., Fort Wayne—I am very glad to hear Dr. Allport say that he does not approve of trainmen wearing glasses for distant vision; I fully agree with him. About one year ago an old engineer on the western division of the Pennsylvania railroad was operated on by me for double cataract, the result with cataract glasses being practically 20/20 vision in each eye. An application for a position as yard-engineer brought an enquiry from the railroad officials as to the amount of vision, and asking for an opinion as to the propriety of allowing the applicant to wear glasses while on duty. While admitting that the applicant had the required acuity of vision in each eye I did not advocate allowing employees in the train service to wear glasses, as the steaming and frosting of the lenses at certain times would render them useless, so far as obtaining satisfactory vision through them is concerned. This same opinion was advanced in the case of another engineer who had but 20/50 vision in each eye without glasses, and 20/20 vision in each eye with glasses.

As to testing the vision of railroad employees I believe intelligent railroad officials can, if properly coached, make as satisfactory examinations of the vision, both for acuity and color-perceptions, for all practical purposes, as nine-tenths of the medical men.

DR. C. F. CLARK, Columbus, Ohio—We have with us a pioneer in this work, Dr. Thomson, of Philadelphia, who over twenty years ago established a method on the Pennsylvania road and issued instruction under which the examiners should work, and I have for sixteen years been working under that system. I do not know that the Doctor now has any reason to criticise that method, and it has been in operation long enough to test it. Dr. Allport has called attention to one point that might perhaps be improved, and that is in always having the first examination made by an oculist. I can not help thinking it is a mistake to allow non-medical men to make the first examination, for if the preliminary examination was made by an oculist he might often detect conditions, which, while not interfering with a man's ability at the time, would indicate that he would not be able to continue in this as his life work, whereas in some other line of work he would be worth twenty or thirty years of good service. The railroad men are better able to determine a man's ability to remain in his position than they are to determine his ability to enter the service.

DR. WILLIAM THOMSON, Philadelphia—I have been so much pleased with Dr. Allport's paper that I would like to make a motion to extend to him, as we did to Dr. Hansell, the thanks of this Section for such an excellent report. (A vote of thanks was adopted.)

Of course, as some of you know, long before 1880 this was a burning question, and my old colleague, Dr. Jeffries, of Boston, and myself were quite obnoxious to the railroad people of the country, if not to the American Ophthalmological Society, for the manner in which we pressed the question of color-blindness. When the matter was presented to me by the Pennsylvania Company in 1879 to see if I could invent some method of practical examination, I found that we could not employ the medical men then in the service of the railroad. That led to the adoption of the system in use there since 1890.

Dr. Allport has given us an eloquent account of what would take place in the examination of a road where there was a large number of employees never before tested. Three or four per cent. of color-blind and perhaps 25 per cent. of the men showing poor vision would be found. This method of the Pennsylvania Railroad system has been adopted by many roads, which I think control about 150,000 miles. I would simply say in behalf of the method that it was a pioneer move intended to take the place of nothing, and I hope it has been somewhat effective in protecting the public and the employees from the disasters of accidents until the present time, when this agitation that Dr. Allport has taken such a good part in bringing about may offer something better.

I agree with Dr. Allport that the examination should be in the hands of oculists wherever possible. Dr. Williams shows us that his road, using the Pennsylvania Railroad method, has made him the examining oculist, for all doubtful cases are referred to him, but if we can formulate something better Dr. Williams and I will both be glad to call the attention of our railroad officials to these points. Now, while Dr. Allport thinks that no examinations should be made by non-professional persons, we have the distinguished example of Dr. Allport himself in his excellent system of examinations of school children where the teachers are trusted to make the original examinations.

DR. C. H. WILLIAMS, Boston—I should like to say that your Section appointed a Committee at the Philadelphia meeting to consider the question of the vision of railroad employees, which practically deals with this same subject. That Committee reported in Denver, a majority and a minority report, and the matter was referred back to the Committee, which was enlarged from three to five members, Dr. Allport being chairman. The Committee decided not to report this year, because the sub-

ject is coming up for discussion at the International Congress this summer in Paris and it was thought best to wait until we had a chance to go over the findings of that International Committee before making a final report. It would seem to me best to refer this paper to the existing committee and let them report on it next year

Dr. Lippincott—I accept Dr. Williams' suggestion.

The Chairman—Then the paper will be so referred.

Dr. J. A. Lippincott, Pittsburg—I would move that the paper of Dr. Allport be referred to a committee, appointed by the Chairman, who shall use it as a basis in drawing up some practical resolutions to guide us in this work.

Dr. Allport, closing the discussion—I desire to say that we all surely bow to our friend, Dr. Thomson, in matters pertaining to this subject, as he certainly has accomplished more than any one along the lines referred to in my paper. If I failed to mention Dr. Thomson's name in my article when drawing some of my conclusions from his writings, it was because we are all so familiar with his work, and feel it to be of such a standard character, that it hardly seems necessary to go on quoting him whenever an article is written on this subject. I wish to thank the Doctor for the kind words he has said concerning my paper, and am delighted to learn that it coincides with his views, especially concerning the opinion that the time has arrived when eye and ear examinations should be made by medical men. Dr. Thomson certainly makes an apparently reasonable argument when he refers to the fact that I advocate the examination of school children by teachers, but do not recommend the examination of railroad employees by non-medical men. It certainly seems to be a lack of harmony between two views, but I think a careful analysis will disclose the dissimilarity between the two conditions. School children should be annually examined in enormous numbers. For instance, during the last few weeks in Chicago the five thousand school teachers in the city have examined about two hundred and fifty thousand children. The expense involved in such examinations by medical men would be an insurmountable obstacle to the work being ordered by the various boards of education, besides that, the examination of children by physicians, concerning whose selection parents have nothing to say, would create a storm of opposition from the ranks of the laity, and I am sure we all, as medical men, understand that the selection of certain eye and ear surgeons to examine every child in a city would engender professional strife and jealousy sufficient to stop the whole proceeding. Then the dangers involved between the examination of school children and railway employees are not at all similar. The preservation of life and property is vitally involved in the examination of railroad men, which certainly is not the case in the examination of school children. These and other arguments which might be produced appear to me quite sufficient to demonstrate that, while I believe eye and ear examinations of the character which I recommend can be made with sufficient accuracy by school teachers, where defective children are always advised to consult a medical man, the examination of railway men can only be made with safety by physicians.

Dr. Williams expresses some dissatisfaction that the three roads with which he is connected are not included in my statistics. I beg leave to assure the Doctor that no one regrets this more than I. I desire to say, however, that it is not my fault. Letters of inquiry were sent to these three railroads with question blanks enclosed, and they were earnestly requested to assist me in completing the statistics. They, however, saw fit to ignore my letters, and, of course, I could not compel them to reply. I sincerely hoped that every road in this country would reply to my letters, but many of them have not done so. I think that after the interest that has been expressed in this paper by the Section, I will in the course of the next year endeavor to secure reports from those roads that have not reported, in order to be able to present complete statistics on the subject.

Dr. Williams thought that switchmen, and some other employees directly interested in the moving of trains, should not be required to possess perfect vision on entering the service. I can not agree with the Doctor on this point. I see no reason why railroads should not require perfect eyes and ears from men when they for the first time enter their service. There are plenty of men seeking railroad employment and it is not a difficult matter to secure those in reasonably perfect physical condition. Probably no one enters railroad service without ambition, and without the hope of advancement. The switchman of to-day hopes to be the fireman or the engineer of tomorrow. Why, therefore, is it not an unnecessary injustice to both the railroad and the man himself to voluntarily select a man below a perfect standard? I can see the force of the argument in favor of great leniency toward old employees, but I can not understand Dr. Williams' position. Dr. Williams also says that 20/20 of vision, with both eyes open, should be considered sufficient. This argument is to me even more inexplicable than the other; for however good vision may be in one eye, the other eye may be extremely defective, lost, or even glass for that matter, which should, I think, certainly disqualify a man from assuming the charge of an engine run at the rate of 40 or 50 miles an hour. Concerning the semaphore arm, we must bear in mind that this is not the only signal used on the railroads, even where the semaphore is adopted. There are many railroads in the country where the semaphore signals are not used at all. If we are to make recommendations that are to be adopted by railroad and medical men, we should make them of such a character that will be consistent and usable on the roads. The opinion has been expressed that non-medical men are competent to make these tests. I can not agree with this view. We know that this system has been used on the Pennsylvania road and on other roads, and we also know that excellent work and results have been achieved, and at the time that this work was inaugurated by Dr. Thomson it was a great step in advance of anything that had heretofore been employed; but I think the time has arrived when we are in a position to take a step further and endeavor to bring about the physical examination of railroad men by physicians, and not by members of the laity. If I understand Dr. Thomson correctly, he himself is now in favor of this plan. If any of you have examined large bodies of men for railroad service after they have been examined by non-professional men, I am sure you will agree with me that such examinations are not safe. I remember one railroad engineer who was sent to me for examination who had been examined two or three times by non-medical examiners. He had a vision of 20/200 and had passed several so-called examinations. He told me that he had never in his life seen better than 20/200, and I have no reason to doubt his statement, as I found he was simply myopic. I obtained for him a vision of 20/20 in each eye by suitable glasses. On the same road I found between 3 and 4 per cent. of color-blind men, after they had passed the examination by non-medical men, and you will remember that this is about the percentage that we find among men who have never been examined.

I desire to thank the Section for the cordiality with which they have received my paper.

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## OPERATIONS FOR SECONDARY CATARACTS.

PETER A. CALLAN, M.D.

NEW YORK CITY.

It is a safe assertion that at least one-third of all cataract extractions require a secondary operation to obtain satisfactory vision. What constitutes satisfactory vision must vary with the different needs of our patients. The uncultured laborer requires less than the educated professional gentleman or business man. The laborer with a vision of 20/70 is able to earn a living and read type as he would naturally choose, while the educated man of affairs would look for at least 20/40. Even with that amount I do not hesitate to do a secondary operation, provided the patient is willing to

* Presented to the Section on Ophthalmology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

assume his share of the risk. When the vision is 20/70, or less, I suggest to the patient the advisability of an operation to improve the sight.

We can divide the so-called secondary cataracts into two classes, the simple and the complicated form. The former consists of hyperplasia of the epithelial cells of the anterior capsule with more or less lens matter. The complicated form has, in addition, exudate due to inflammation of iris, ciliary body, or uveal tract as a whole.

The time to operate on a secondary cataract should depend on the condition of the eye. If it has become normal in appearance and does not redden up when it is grasped by the fixation forceps, we are generally safe in our presumption that it is quiescent, and will not unduly react after the operation. Personally, I prefer to delay the secondary operation for a period of months after the extraction, rather than run any unnecessary risk by undue haste. In all surgical procedures there is the ever-present danger of infection, due to surgeon, instruments or field of operation. The danger from sepsis, following an operation, ought to be of extreme rarity if we are clean in our methods of procedure; still, it does occur, with loss of eyes as the net result. It is poor consolation for the patient after the loss of an eye to learn that the surgeon thinks that the infection was introduced at the time of the cataract extraction. If such were the case there is no question but that the secondary operation was done too soon and might have been avoided by waiting. Aside from infection, the great danger is from traumatism exerted on the ciliary processes, and if this can be avoided, we can perform secondary operations without dreading an unfortunate outcome. The attacks of glaucoma and iridocyclitis, which often ensue, are in the main due to faulty methods employed or interfering too soon after the cataract extraction. We can attribute our disasters to operating too soon and exerting too much traction—in the effort to obtain a clear pupil—on the ciliary processes.

The underlying principle which ought to guide us in operating on pupilary membranes is that we should cut and not attempt to tear them. Personally, I now limit myself to two methods in operating on all forms of secondary cataracts.

When the pupilary membrane is thin and veil-like, of uniform color, without whitish bands across its surface, I use Knapp's knife-needle according to his method. Having a dilated pupil, make two incisions in the membrane; the first should be above in the horizontal plane, the second from below upward to the first, thus making a T-shaped opening. The corneal puncture is made about 3 mm. from the limbus, up and out or inward, as is necessary in the right or left eye.

If the membrane should be tough, the knife-needle does not cut, but it is likely to tear, if we exert force, and drag on the ciliary processes. I was unfortunate in using this method and lost an eye from iridocyclitis. I had made a cataract operation on both eyes of a woman of 65 years. The last extraction was about one year before I did the secondary operation. The eye last operated on had a thin web-like membrane in the upper third of the pupil, while the lower two-thirds was crossed by a white band. The upper horizontal cut was readily made, but in attempting to make the vertical incision I met with considerable resistance and must have used too much force, which resulted in the loss of the eye.

I had another case, with a better final outcome—a young man with a soft cataract, where three incisions had absorbed the lens, leaving a thin pupilary membrane, which was diagonally crossed by a narrow band, cord-like in character. In this case I did not succeed in cutting through the band with the knife-needle; I withdrew the needle, enlarged the corneal opening and introduced the forceps-scissors into the anterior chamber and readily cut the resisting band without any difficulty. A mild attack of cyclitis resulted, which kept him in the hospital for over three weeks. Patient was discharged cured.

For the past several years I have used the forceps-scissors of De Wecker, to the exclusion of all other methods in operating on thick or tough pupilary membranes, where the lens has been removed, either by extraction or absorption. I consider De Wecker's model the best. The forceps-scissor blades should be 13 to 14 mm. long from point to heel and not to exceed 2 mm. in width when closed, and the greatest thickness 1.75 mm.

In using the forceps-scissors the corneal opening should be selected so as to give free play to the instrument within the eye. With an occluded pupil make the corneal incision about 2 mm. from the limbus, but with a mobile pupil the corneal opening should be opposite the point of maximum dilatation, otherwise we are very likely to button-hole the iris. The iris falls forward with the escape of the aqueous and comes in contact with the scissor blades. In the case of children it is imperative to work quickly, otherwise the iris sphincter contracts and covers the opening in the membrane, so that it is not possible to insert one of the scissor blades behind the tissue to be cut. I find Agnew's angular keratome, which is 16 mm. long and 4.5 mm. wide, the most satisfactory instrument for making the opening in the cornea and membrane. It is long enough to reach any part of the anterior chamber where we may wish to pierce the obstructing tissues. The modus operandi is as follows: Incise the cornea at any point from 2 to 4 mm. with the keratome; then partially withdraw the instrument, elevate the handle and gently push down the point through the tissue to be cut by the scissors. The opening need not exceed 2 mm. and the keratome should not enter deeply into the vitreous. Having withdrawn the keratome, insert the blades of the forceps-scissors closed; when within the anterior chamber, open scissors and push one blade through the opening in membrane, then cut. If the tissue is tense and on the stretch, one cut is enough, but with a flaccid membrane, two are necessary in order to secure a V-shaped aperture. If we have to deal with a small occluded pupil, simply limiting our incisions to pupilary area will not be sufficient; it then becomes necessary to include the iris sphincter, if not more, in order to secure a satisfactory result. I prefer to cut the iris above, rather than below, for cosmetic effect. In operating on eyes without displaced pupils, due to prolapse or incarceration of iris, it is necessary to make three incisions with the scissors, one on each side to free the iris from the traction to the corneal cicatrix and a vertical cut through membrane and iris. The lateral incisions should be of sufficient length to free the involved part of the iris, and the amount of pupil displacement should guide us as to what length to carry the downward cut.

In nuclear, perinuclear and soft cataracts of the young, where we have made several discissions, the result is not always quite satisfactory, owing to thickened

capsule containing more or less unabsorbed lens matter. The further use of a discission needle is not advisable; while it might cause some more absorption, there is still the opaque capsule. I have found the following method most satisfactory: In young children general anesthesia is imperative. With mydriasis of pupil, incise cornea opposite upper border of sphincter, insert the point of keratome about 2 mm. below upper edge of dilated pupil, through capsule and its contents. Withdraw keratome with as little escape of aqueous as is possible. Introduce forceps-scissors through corneal section; insert one blade through and behind the capsular opening; then cut downward to the iris, pushing the upper blade behind it and continue the incision almost to the periphery. In traumatic cataracts of long standing, especially of the young, where most of the lens has disappeared, and in unripe senile cataracts after extraction, leaving considerable lens fibers within the closed capsule, the forceps-scissors, when properly used, give most excellent results. When there is considerable lens matter it is often necessary to freely cut the capsule in various directions in order to remove the mass by syringing. If we are adverse to introducing the nozzle of the syringe into the anterior chamber, by depressing the posterior wall of the corneal wound, with the syringe held at an angle of 30 degrees, we can force a column of water over the opening and accomplish the same result.

It not infrequently happens that after the division of the capsular membrane it is possible to remove it, in part or the whole, from the eye, without exerting any force, and secure a clear, black pupil. This method is not without its drawbacks; we are apt to lose some vitreous, especially if it is fluid. If it is done too soon after the original operation, before the eye has fully recovered, the opening obtained will not be permanent.

In regard to Bowman's method, the use of two needles for tough membranes, while often very satisfactory results are obtained, by this means we never feel sure of the amount of traction exerted on the ciliary processes. The underlying principle of the method is faulty, inasmuch as the opening obtained through the membrane is done by tearing the tissue, and the tougher the obstruction so much greater is the pull at right angles to the movement of the needles.

As far back as the first quarter of the 18th century Cheselden performed iridotomies with a small one-edged knife, which suggested to De Wecker the forceps-scissors; by means of this secondary cataracts can be removed from the pupilary area, by cutting without any traction, with minimum of reaction as a result of the operation.

DISCUSSION.

Dr. Herman Knapp, New York—I am very sorry I did not hear Dr. Callan's paper. Thus, I shall have to begin where my predecessor left off. He believed that a simple extraction was the ideal method, but that there were many objections to it. I say the simple extraction is not only the ideal method, but the best and safest, and this is not a theoretical speculation, but the experience of over fifteen years. I can say that there is no year within that time in which I have done less than 100 extractions. I make an iridectomy only when there is a complication necessitating it.

The method which I have followed and which avoids almost altogether the thickening of the capsule, avoids also iritis, which is often the cause of the thickening. In the ordinary recovery from cataract extraction there should be no inflammation at all, but a smooth healing of a clean aseptic wound. There are, however, not a few cases where the conventional operation itself is productive of the adhesions. You rupture the capsule in a variety of ways and the lens comes out through the section, but when you look attentively at the iris you will discover many fine ruptures in its pupilary edge which are produced by the out-going lens. You do not see them any more when the lens is out and the pupil back in its place. Adhesions develop at these imperceptible fissures which come in contact with the shreds of the lens capsule. This can be avoided by passing the cystotome through the pupil under the iris and after turning it gently rupture the capsule near its periphery, parallel with the corneal section. This is not so difficult as it appears and is easily accomplished after some practice. The incision of the capsule heals by cicatrization and from the scar you see in some months or years a number of wrinkles in the capsule. By the peripheral capsulotomy the iris is kept away from the capsular wound, and the intact part of the capsule does not come into contact with any of those little fissures at the pupilary edge of the iris. Thus, we obtain a free and round pupil. When a capsule is ruptured in the form of a T—and some seem to think it unusually smart to do this; I saw also Graefe do it—this opening will heal with a T-shaped scar, from both sections of which radiating folds will develop that are unpleasant to deal with.

In regard to this peripheral capsulotomy, it is very necessary that the cystotome should be exceedingly fine, delicate, and very sharp, for there must be no tearing whatever of the capsule, nor of the iris, at any time. When we make this operation with a thin cutting point we get just as clean an incision as in the cornea, and when we dilate the pupil afterward we see the scar very distinctly.

It is not only necessary that the incision should be correct, but it is also necessary to consider the amount of resistance with which we have to deal. If the cataract is hyper-mature we are very apt to dislocate the lens. If the lens is hard, it may be turned round in the capsule; and if the cataract is too dense, we are apt to rupture the suspensory ligament of the lens, which leads to escape of vitreous, either during the operation or afterward, commonly the next day, with prolapse of the iris. The latter is likely to occur in all cases in which the suspensory ligament is frail or defective. If we can detect this condition before the operation, for instance in tremulous cataract, we do best to cut out a piece of iris immediately after the corneal section. When prolapse of iris is noticed the next day, even if it be small, it is best, in my opinion, to abscise it immediately, which can be done easily and cleanly, and the result is just as good as that of a combined extraction.

In the secondary cataract operations, we have to deal with capsules that are wrinkled and nothing else, and I think myself to be of the same opinion with all of you in believing that nothing need be done except to split it with a knife-needle, by a T-shaped or crucial incision, as the case may be. Where there is a thickening of the capsule, the best thing to do is to make the incision at the upper part through cornea and capsule, draw a piece of the latter out with a pair of delicate forceps, and cut it off.

There is a kind of secondary cataract, though, where the capsule, through inflammatory products or whatever it be, produces a dense membrane from one side to the other. If the membrane is not too tough it can be dealt with by the double needle introduced through the same opening in the center. Now, the most difficult ones are those capsules that are not only thickened, but degenerated. In those cases I have made several kinds of operations, and the one I have pursued for a length of time is the so-called cystiridectomy. I go in through the cornea, iris and capsule and take out something of this, either by the hook, which is the most convenient instrument, or by forceps. I have of late, as well as formerly, used the De Wecker forceps-scissors and their new modifications by Esberg and Schweigger. I have had some good results from this procedure, but in those cases where there is much cicatricial tissue there is no method that is entirely satisfactory, for the new pupils are apt to close again and in some instances they will do this three or four times. Those are cases for which I know no remedy.

I ought to say something about the question of reaction, in particular glaucoma following secondary capsulotomies. These are much better than their reputation. I know that, for I

speak from a very large experience. I am quite sure my experience with this operation reaches 2000 or more cases, and I can not say that any eye has been lost. In a number of cases increased tension occurs, but it is controlled by eserin or pilocarpin and injection of morphin, and as soon as you use those remedies a great many of the irritative symptoms of the first night when the eyeball is hard, will disappear, but there are a certain number of cases where the glaucoma is not controlled by these measures and has to be treated by iridectomy. A simple paracentesis does not cure all cases of glaucoma after division as Pagenstecher asserts.

DR. H. V. WURDEMAN, Milwaukee—May I ask what is your procedure for endeavoring to make peripheral capsulotomy when you find that the lens turns?

DR. KNAPP—Those cases are rare, but the best thing is to press a little more on the cornea opposite the lower edge of the cataract. The lens then may come out through the pupil as usual, or turn about 180 degrees on its horizontal axis and you may witness a breech delivery that will please you.

## SYSTEMATIC CLEANSING OF THE NASAL CAVITIES BEFORE OPERATIONS WHICH INVOLVE OPENING OF EYEBALL.*

J. A. LIPPINCOTT, M.D.

PITTSBURG, PA.

Operations which involve penetration of the ocular tissues, such as cataract extraction, discission, the removal of foreign bodies from the interior of the globe, and iridectomy, whether optical, therapeutic or preliminary to the removal of cataract, are sometimes followed by inflammation of different degrees of intensity, with results varying from a simple and possibly harmless synechia to a destructive panophthalmitis. A considerable portion of these unfortunate results may be prevented by a well-executed operation characterized by a sufficiently large incision, gentle manipulation, careful cleansing and accurate approximation of the lips of the wound. But the most perfect operation—from a mechanical point of view—is occasionally the first step in a series of changes which, passing through corneal infection and suppurative inflammation, terminates only with enucleation of the eye.

The measures usually taken to prevent infection have reference to the field of operation and to the preparation of the instruments. In regard to the former, the precautions generally employed, viz., conscientious cleansing of the conjunctival sac, the lid edges and the adjacent parts of the face, together with flushing of the sac with some mild antiseptic, such as a weak solution of the bichlorid or of the cyanid of mercury, are probably as good as could be adopted.

As to instruments, the modes of preparing them perhaps most commonly employed, viz., letting them remain in alcohol for twenty to thirty minutes, or holding them in boiling water for a few seconds, are not theoretically correct, i.e., they will not successfully stand the ordeal of a culture-test. Many such tests made by myself and my assistant, Dr. Joseph L. Duncan, proved that purposely contaminated knives were not sterilized after immersion in alcohol of any strength for twenty-four hours and that boiling for twenty seconds by the watch was also ineffectual. The method which I employ and which, besides being practical, stands rigid bacteriologic tests, is to keep the cutting instruments constantly immersed in a liquid consisting of formalin, 20 per cent., and saturated solution of biborate of soda. Other instruments are boiled for fifteen or twenty minutes in borax solution.

While, however, I am a purist in practice I am not disposed to question the practical efficiency of methods which may be imperfect from a theoretical point of view. You are probably familiar with the opinion of Professor Knapp,[1] expressed some years ago, to the effect that a smooth instrument like a cataract knife, if carefully washed and wiped, might be regarded as surgically clean. Furthermore, I used the alcohol method for many years and I do not believe that any case of infection which occurred in my practice was due to unclean instruments. In point of fact, I am convinced that the principal source of infection in eye operations as now generally performed is to be sought neither in our instruments nor primarily in the conjunctival sac. In a paper read by me before the American Ophthalmological Society, in 1891, occurs the following passage: "I am inclined to believe that in a considerable proportion, if not the majority, of these cases of obscure causation, the *fons et origo mali* is in the nasal chambers, from the intricacies of which, as from an almost inaccessible stronghold, armies of micro-organisms, scenting out with fell sagacity the operative breach in the cornea, crowd through the lachrymal passages into the conjunctival sac. Hence, though much has been and much can be done to minimize suppuration following operations on the eyeball, we can scarcely expect to wholly eliminate it; for although we can sterilize our hands, our instruments, and the parts surrounding the eye, we can never be sure that the conjunctival sac is, or will remain, free from germs unless we seal up the puncta, a procedure likely to be resorted to only in exceptional cases. We may, however—and it would probably be good surgery—carefully examine the nasal cavities in all cases before operating, and, where disease of this region is observed or suspected, apply a more or less prolonged preparatory treatment. Indeed, no harm can, and much good may, result from spraying the nostrils with an antiseptic solution before the operation in every case. In opposition to the view here expressed, it might be urged that nasal catarrh is a very common affection, while corneal suppuration after operation is rare. The explanation may lie in the facts that nasal catarrh usually exhibits no purulent tendency, that if there are pus germs in the nasal cavities, they need not necessarily reach the eye, and that even if they do, the invaders may be routed by those not yet well-understood agencies which fight for the integrity of the tissues."

The impossibility of sterilizing the conjunctival pouch, demonstrated by Gayet[2] thirteen years ago, is easily accounted for by the free communication through the tear-passages with so prolific a breeding-ground as the nasal cavities. Out of 100 gelatin tubes stabbed from the nostrils of adults making no complaint of nasal symptoms, 94 contained micro-organisms, among which were bacilli, staphylococci, streptococci and other forms of micrococci. Such a condition of things was to be expected, from the fact that the nasal spaces are the gateways and in a certain sense the filters through which passes or should pass all the air we breathe.

Although I have been for ten years in the habit of giving attention to the nose in cases that appeared suspicious, I did not until comparatively recently commence the method which I now employ and which is as follows: A few hours before operation, in every case, a spray of potassium permanganate, 1 to 2000, is thoroughly ap-

*Presented to the Section on Ophthalmology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

1 Transactions Am. Ophthal. Soc., iv, 195.

2 Archives d'Ophthalmologie, vii, 353.

plied to the nostrils. In some cases the spraying is repeated imediately before the operation, and, where there is decided evidence of nasal disease, each of the three or four days succeeding it. The permanganate spray, besides not being specially unpleasant, has potency enough to destroy a large proportion of the organisms with which it comes in contact, and to lull most of the rest into a beneficent inactivity until the corneal wound is closed. This procedure has been carried out in each of my last 152 operations in which the globe was penetrated. Of these, 60 were cataract extractions, 17 were discissions, 21 were operations for the removal of foreign bodies, and 54 were iridectomies for optical purposes, for glaucoma or for chronic iritis, or were preliminary to the extraction of cataract. In these operations there was not only a complete absence of any sign of suppurative inflammation, but there was an unusual degree of freedom from inflammation or irritation of any kind, although a number of the cases were of an unfavorable nature. The wounds healed with less than the usual degree of redness, and convalescence was more speedy than in my previous experience. By way of illustration I shall cite two cases.

Case 1.—Mrs. W. Y., aged 62, had been operated on by myself for cataract affecting the right eye, in 1896. The operation, which was entirely satisfactory, was followed by corneal suppuration, hypopyon and very violent iritis, which kept her in her room for nearly two months and left her with the iris extensively adherent to a very opaque capsule. It is true that discission subsequently gave her good vision—with +14=20/30—but the experience was a long and trying one, both to her and to myself and came nearly ending disastrously. In June, 1899, I operated on the other eye, having sprayed the nose well with the permanganate solution. This time, healing kept on promptly, painlessly and almost without redness, and the patient went home on the eighth day without a synechia or other sequela of iritis. Corrected vision some weeks later was 20/20+.

Case 2.—Mrs. E. L., aged 64, had double-sided cataract, complicated with myopia and extensive choroidal atrophy. The left eye was operated on by me Jan. 21, 1898. Operation was followed by severe iritis. Eventual recovery, and with +2.5⊃+2 cyl. horizontal, vision = 20/70. In May, 1898, preliminary iridectomy was made on R. E. Notwithstanding free use of atropin intense iritis ensued, causing firm adhesion of the lower three-fourths of the pupilary margin. On Nov. 2, 1898, after freely spraying the nostrils with the permanganate solution, the iris was dissected from the lens and the latter removed. Healing process was rapid and smooth, without any iris trouble. The resulting vision was quite poor, only 3/200, but this was explained by the existence of a large area of complete atrophy of the choroid in the neighborhod of the macula.

I have long been of the opinion that the introduction of pathogenic—not necessarily pyogenic—germs is more common after the more important operations on the eye than is perhaps generally supposed, and that to it may be attributed in a large measure the not very infrequent cases in which post-operative inflammation of the iris and other tissues is observed.

As a measure of prophylaxis against such inflammations, as well as against infection of the corneal wound with its dreaded consequences, I think that systematic cleansing of the nasal cavities by means of permanganate of potassium solution or some similar agent will prove a useful addition to our antiseptic precautions.

DISCUSSION.

Dr. G. E De Schweinitz, Philadelphia—Since the first of the year I have followed Dr. Lippincott's method, using a solution of 1 to 5000, and have employed it in perhaps thirty or forty operations. It has been my experience that the spray seemed to reduce the hyperemic condition of the conjunctiva which sometimes follows extractions and various operations. Most of these operations were done in the hospital, where I deal with a poor class of patients. I have seen disagreeable results only once, and they occurred in a man who sneezed thirty times after the first atomization. Sterilization of the nasal cavities is a proper procedure, and as permanganate of potassium is a powerful antiseptic, it would seem suitable for this purpose.

Dr. J. A. White, Richmond, Va.—It has always been my practice when there was any trouble with the nose to cleanse it prior to an eye operation. In the methods of cleaning our instruments we may differ somewhat, the main thing being to have the instruments and the field of operation as sterile as possible. I have followed Dr. Lippincott's method and I use the formalin sterilizer, but in the preparation of my patient for operation I have for many years back, notwithstanding the fact that many observers claim that it is impossible to get the conjunctival sac sterile, tried to get it as sterile as possible. The method I have used for ten years has been so satisfactory that I want to give the results of that experience. It is my habit always in preparing a patient for cataract extraction to sterilize the face and to irrigate the conjunctival sac thoroughly with normal salt or 1 to 10,000 bichlorid solution, and afterward to fill the eye with a preparation that I call sterilized vaselin. This is made by adding 1 gr. of bichlorid and 5 gr. common salt to 6 ounces of vaselin. The salt may be dissolved in a little water and the vaselin is boiled, although it is usually claimed to be sterile, and the solution of salt is then easily incorporated. Then I have a cotton pad dipped in bichlorid placed over the eye and hermetically sealed and the eye is not opened again until the patient is on the table for operation. If left on over night, I usually find on opening it that much of the application has been absorbed. As soon as the operation is concluded I fill the eye again with this same preparation. The amount of irritation is not more than that which commonly follows a drop or two of cocain solution. I have had a long and very successful experience in operating and have never had a case of sepsis of any kind, nor any of the complications I used to meet with prior to the time I adopted this method.

Dr. R. S. Magee, Topeka—I simply want to mention the fact that in troublesome ulcerations of the cornea I find that the cleansing of the lachrymal sac, as well as the eye, gives beneficial results. No doubt you have all found ulcerations that will not heal under the various plans of treatment, and can not be expected to until the nasal sac and passages surrounding are thoroughly cleansed. The solution I use is a saturated boracic acid.

Dr. C. A. Veasey, Philadelphia—I simply desire to add my testimony to the efficacy of the method advocated by Dr. Lippincott and which I have now been using for upward of a year. Before I began to use the intranasal sprays of potassium permanganate, previous to operations involving the opening of the eye-ball, it was my custom to employ some mild antiseptic alkaline spray, preferably Dobell's solution, but since I have adopted the new plan I get better results than I did before.

I have met with the complication referred to by Dr. De Schweinitz, that of sneezing, and it is exceedingly annoying. Occasionally a small amount of the solution penetrates the accessory sinuses of the nose and will trickle into the posterior nares after the patient is laid upon the table, producing the paroxysms of sneezing. Another complication I have met with in a small number of cases has been an intense nausea produced in patients of delicate sensibilities. One lady assured me a few weeks ago that it produced for her a sensation like the odor of a dead mouse, and was always followed by intense nausea and vomiting, so that I was obliged to abandon the

use of it. These cases are rare and should not deter us from its employment in most cases.

Some time ago I adopted Gifford's method of wiping that portion of the cornea to be penetrated, just preceding any operation involving the opening of the ball, with a pledget of moist absorbent cotton, and I am quite sure the method often prevents germs from being carried into the eye at the time the instrument enters.

DR. S. LEWIS ZIEGLER, Philadelphia—As Dr. Lippincott knows, I have been interested in the nasal end of eye surgery for some time, but I have not used the permanganate solution. I have used a solution of silico-fluorid of soda, as recommended by the late Dr. Goodman. In cases where there is real danger of infection from the tear-duct a suture placed in the cornea after the operation and the wound treated as an open one, either with or without ice, with frequent use of an antiseptic wash, has prevented any complications in the way of infection.

DR. G. A. ASCHMAN, Wheeling—In cases where there is purulent condition of the nasal sac and canal, or ozena, I have found valuable help by closing the lachrymal puncta. At the Detroit meeting I read a paper on the treatment of dacryocystitis and advocated this measure. They are closed by introducing the electric cautery almost up to the end of the canaliculus. I think you will all come across cases of this kind, and I believe that by this method the so-called inoperable cases will be done away with. There are cases that can not be postponed, and I believe this is an efficient way to operate on them.

DR. LIPPINCOTT, closing the discussion—I can add only a word to what I have already said. As to the sneezing, curiously enough I have not seen it, but no doubt the next dozen cases I operate on will all sneeze, as things generally occur that way. My patients have not complained of the spray being especially unpleasant, but I do not allow the spray to get back into the throat, making the patient sit with the head bent forward, and stopping for a moment or two when there is any sign of the fluid getting into the pharynx.

Dr. Aschman's suggestion of closing the punctum is, of course, a very old matter, and was referred to in a part of the quotation I did not read. Most of us do not wish to seal the punctum in ordinary cases, and it is only applicable to the cases he referred to. Where the nasal duct is thoroughly probed and syringed, I have never had any trouble with cataract operations.

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## A CASE OF COLOBOMA OF EACH LENS WITHOUT COLOBOMA OF THE IRIS OR CHOROID.*

JAMES MOORES BALL, M.D.

Professor of Ophthalmology in the St. Louis College of Physicians and Surgeons; Ophthalmologist to St. Joseph's Ophthalmic and Surgical Sanatorium.

ST. LOUIS.

Instances of coloboma of the crystalline lens are so rare—only about seventy having been recorded—and bring up so many interesting questions for discussion, that I feel justified in directing your attention to a case in point.

S. B., male, white, aged 14, was brought to me on Oct. 7, 1899, on account of defective vision. The parents state that he was a delicate child and never was able to see distinctly. Seven years ago glasses were purchased from an optician, and two years since an ophthalmologist prescribed for him.

The boy is an ungainly looking youth; he is 5 feet 7½ inches in height, weighs 100 pounds, wears a 7⅜ hat, and has flat feet and a chicken breast. Four years ago he was operated on for adenoids. With the exception of an attack of scarlet fever he has had no serious sickness. When 3 months old he was salivated. The parents are strong, healthy appearing people. The father acknowledged an attack of gonorrhea before marriage, but denies syphilis. However, a medical friend who knew the father intimately, informs me that he contracted syphilis before marriage. The boy was born eleven months after the marriage of his parents.

The boy is a blond, with blue eyes. To ordinary inspection the eyes appear normal, except for a slight prominence suggestive of myopia. The ocular movements are normal; there is no tremulousness of the irides. The pupils measure 6 mm.

Vision of the R. E.=8/200; of the L. E.=6/200.

The astigmometer of Kagenaar gives the corneal astigmatism as: R. E.=3.00 D. axis 35°; L. E.=2.25 D. axis 135°.

Under atropin the best vision results from these lenses: R. E.=—13.00⌒—5.00 axis 35°=20/50; L. E.=—11.00⌒—2.25 axis 135°=20/40.

After the effect of the mydriatic had passed off, I prescribed these glasses for constant use: R. E.=—12.00⌒—5.00 axis 35°=20/50; L. E.=—10.00⌒—2.25 axis 135°=20/40.

With these lenses he can read, with R. E., Jaeger No. 6 at 10 to 28 cm.; L. E., Jæger No. 2 at 7 to 21 cm.

As remarked by Clark,[1] few cases of coloboma of the lens are recorded in which mention is made of the refraction and accommodation. The reason is that in many of these cases vision is too defective to permit such study.

It will be noticed that in the right eye there is a difference of 2 D. of astigmatism between the findings of the ophthalmometer and the trial case. Retinoscopy shows the amount of astigmatism to be 5 D. I conclude that 2 D. of astigmatism must be lenticular.

Examination of this boy by the ophthalmoscope before using a mydriatic shows coloboma of each lens. The appearance after the use of atropin is shown in the accompanying illustration. No attempt has been made to delineate the retinal vessels. The object of the illustration is to present the defect in the lenses.

There is no coloboma of the iris or choroid. The lens capsule and suspensory ligament are not visible. There is no displacement of either lens. The lenses are transparent up to the lower borders, which appear of a golden-brown color. The fundi are normal.

In looking into literature, I find that most cases of coloboma of the lens show the defect in the lower part. Three exceptional cases are on record: in that of Schiess[2] the lower and outer border was wanting; in that of Lang[3] the defect was directly outward, and in the case of Bronner[4] the coloboma was upward and outward. Doyne[5] has described a case of coloboma of iris and choroid with a projection of the corresponding margin of the lens.

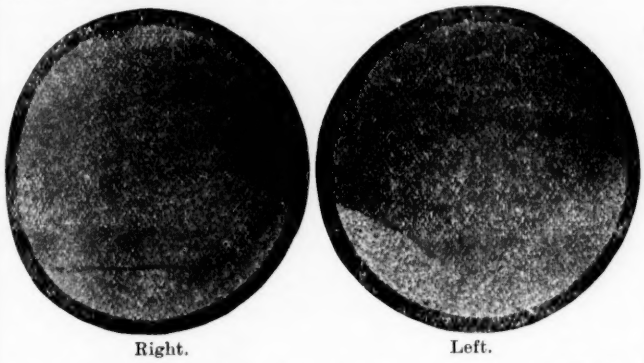
Eyes with coloboma lentis usually present myopic refraction. Bowman[6] and Heyl[7] have recorded cases in which the refraction was hypermetropic. Gruening[8] met with it in an emmetropic eye.

How are we to explain the occurrence of coloboma of the lens? Lang and Treacher Collins[9] say: "The abnormity is caused by some defect in the development of the suspensory ligament. As has been already mentioned, this is developed by adhesions forming between the sides of the lens and the ciliary body at that period of fetal life when they lie in contact. Should some of these adhesions fail to occur, then, as the eyeball enlarged, that portion of the capsule to which no suspensory ligament was attached would not be held taut and made to expand like the remainder; consequently there

* Presented to the Section on Ophthalmology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

would be a depression in the lens in that situation. The amount and shape of the deficiency would depend on the extent of the defect in the suspensory ligament. The most likely cause for the absence of adhesions between the ciliary body and the side of the lens, with a consequent defect in the suspensory ligament, would be an absence of the ciliary body; and, as we have already said, a coloboma of the ciliary body is frequently found associated with coloboma of the lens."

Norris[10] says: "While this feebleness or defect in the zonula is probably the true explanation of some superficial notches, and possibly due to imperfect closure of the fetal slit, the deeper notches in the lens, as has been pointed out by Heyl and Hess, are probably caused by some congenital defect dependent upon an anomalous distribution of the hyaloid artery or of its branches to the posterior lens capsule. The exact nature, however, of such a congenital defect is very differently understood by the two authors just mentioned. Heyl holds that insufficient or arrested development of some of the vessels of the vascular lens-capsule causes an arrest in the development of the lens, while Hess maintains that the defects are due to pressure on the lens by some portion of vascular fetal tissue which has not undergone regressive changes and absorption at the usual time. Bock also believes that the vascular plug of ingrowing mesoderm is a hindrance to development at the points of contact, while Bach thinks that the lens at times becomes too large for the secondary optic vesicle, and that at the point of contact with the ingrowing mesoderm there is sufficient pressure to cause molecular degeneration of the subcapsular fibers, which undergo gradual absorption and leave a notch in their place."



Right. Left.

Which of these explanations is correct I will leave to your judgment. Since only about seventy cases of coloboma lentis are recorded, it must be that the condition is occasionally overlooked, or, if found, remains unreported.

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DISCUSSION.

Dr. A. B. McConachie, Baltimore—I have very little to add to the discussion, my personal experience having been limited to a single case, and that not exactly of a character that has been depicted. It was one that, in addition to this defect at the equator, had also a displacement. A boy about 12 years of age came to me two years ago complaining of double vision, which he could avoid by contracting the lids. I could see the dislocated lens upward and outward, and the lower border was slightly excavated. There was also a coloboma of the suspensory ligament, extending completely down to its ciliary attachment. The condition was symmetrical in each eye. Naturally, there was in the lower inner segment a hypermetropic condition and this gave an excellent opportunity by skiascopy to show the myopia above and hypermetropia below.

As to the origin of these faults, I think there is much in the explanation that is hypothetical, and we are not yet able to study them as we ought to. Our study is largely ophthalmoscopical, and our opportunities being limited, we must expect to remain in darkness for some time. In regard to those cases in which the coloboma occurs otherwise than in the region of the ocular fissure there is more difficulty of explanation. I believe Dr. Theobald, of our city, has reported one case in which the cleft appeared in the upper and outer segment. Doubtless those cases are due to faulty development of the suspensory ligament.

Dr. George E. De Schweinitz, Philadelphia—I would like to put on record a case that came to the Jefferson Hospital Dispensary a few weeks ago, a colored boy with double coloboma of the lens, associated with a coloboma of the iris. The general refraction of the eye in this case was hypermetropic.

Dr. R. L. Randolph, Baltimore—I may mention in this connection a case I saw about two months ago of a man with microphthalmus with coloboma of the lower border of the lens, also associated with coloboma of the iris, choroid and optic nerve. It was the first time I had seen the latter condition.

## A STUDY OF THE INOCULATION THEORY OF MALARIAL FEVER.*

ALBERT WOLDERT, M.D.
PHILADELPHIA.

At the outset of the discussion regarding the inoculation theory of malarial fever through the agency of the mosquito, it seems best to spend a passing word in giving credit to those who have labored to bring about a revolution of ideas in regard to the etiology of this disease. The man who principally formulated the theory that the mosquito acted as the intermediate host in the life history of the malarial parasite was Patrick Manson, of England. Manson, in a measure, followed the views of Lancisi, of Italy, and of Laveran, of France, in that the malarial parasite through the mosquito first passed into water, and in that way was ingested by man. But Manson did not prove this theory. Ronald Ross, of England, caught the inspiration from Manson, and in India, after months of toil, proved by observation and confirmed by experiments on birds that the mosquito really and in truth did act as the host of this parasite. Thus began the movement toward the proper knowledge of the life history of the malarial parasite. Amico Bignami, under the direction of Battista Grassi, of Italy, was first to prove the inoculation theory in the case of man, on the person of Abele Sola, an inmate of San Spirito Hospital, who voluntarily submitted himself to such an experiment. The work of Marchiafava and Bignami in Italy, of Koch in Germany, and of Thayer in this country, can not be mentioned without praise.

The full development of the theory, and confirmed by proof, that the mosquito acted as the intermediate host in the life cycle of the sporozoa of malarial fever has a far-reaching importance and carries one into new fields of thought regarding the various other unknown hosts which may perhaps act similarly for many of the other infectious diseases.

The keynote of this subject was struck by Theobald Smith, who in a recent lecture delivered before the Phil-

adelphia Pathological Society,[1] stated that in making studies in biology one should record carefully all his experiments made on the lower forms of life, whether they at the time seemed of interest or not to the individual investigator.

Starting on the road in pursuit of the facts in regard to the inoculation theory of malarial fever one encounters at the very threshold the sciences of biology, zoölogy and entomology. History states that the term "mosquito originated on this side of the Atlantic Ocean, such being first used in the West Indies, where, it is learned, the word 'mosquito' meant 'a kind of gnat streaked with silvery white, the female members of which have a piercing and sucking apparatus, and annoy man.'" This term is well founded and is a better one than the word "gnat," which has recently come into vogue by certain writers of the old world. The former term distinguishes the mosquito from gnats in general, from the chironomus, and from various other insects analogous to the mosquito.

For the most part, this article deals with two genera of mosquitoes, namely: genus Culex and genus Anopheles, both of which belong to the natural order Diptera.

The Culex pungens deposits its eggs in pails and drains, or vessels of any kind, around the house, while the Anopheles seeks natural ponds or puddles left after heavy rains, and usually in those places which do not contain fish. The number of eggs deposited by the female Culex pungens is about 200, and at the end of three weeks the full-grown mosquito develops. Several broods are hatched each season. The larvæ of the Culex float with head downward in the earliest stages, and breathe through a pneumatic tube at the end of the tail, but later the mature larvæ—or pupæ—reverse their position and then float with head upward, doubtless breathing through two prolongations or spiracles projecting from the head. When disturbed they wriggle rapidly to the bottom of the vessel in which they are contained. The larvæ of the Anopheles, according to Ronald Ross, lie flat upon the surface of the water, like sticks, and when disturbed they move off with a backward skating motion. Marchiafava and Bignami[2] describe the larvæ of Anopheles as "being brown in color, and always move in a horizontal direction, never in a vertical or oblique one," as do those of Culex. The larvæ of Anopheles live in fresh water, such as streams or artificial lakes which contain green moss or algæ. I have been able to confirm these observations of Ross and of Marchiafava and Bignami.

The Culex pungens may be found in the heart of cities, the Anopheles in rural districts, and frequently in the rooms of patients suffering with malarial fever. The Anopheles is frequently found in barns and near horses or cattle, and may be transported through hay to cities and thus lead to local outbreaks of malarial fever, as pointed out by Marchiafava and Bignami.[2]

One may devise either of two methods in studying the relation of mosquitoes to malarial fever; first, to search for the Anopheles in its native haunts and then for the case of malarial fever; or secondly to find the case of malarial fever and afterward look for the Anopheles.

The mosquito is ubiquitous over the face of the earth. It may be found in the tropics, and in regions of perpetual snow. While on a recent investigating journey to Washington, Rear-Admiral George Wallace Melville, who was on the steamer *Jeannette*, which a few years ago made a trip to the Arctic region, informed me that when in Siberia, between the Lena delta and Yakutsk, about 1200 miles from the north pole, mosquitoes prevailed from June to September, and bit severely during those months. In 1877 and 1883 he visited the west coast of Greenland, 500 miles from the pole, or in latitude 65 to 78.30 north; mosquitoes bit fearfully during July and August, but worse in the former month. In August and September, 1878, he visited Norton Sound, and when at St. Michael's, in the Behring Sea, south of Cape Prince of Wales, and east of Cape Prince of Wales Island, mosquitoes were abundant. He also visited the region of St. Lawrence Bay, westward of Cape Prince of Wales. Here mosquitoes were also found. On each of these expeditions members of the crew were severely bitten, but not one had fever of any kind. I was told that so bad are the mosquitoes in these regions that animals coming down in the warmer months are driven back north again by the swarms of mosquitoes which infest that region.

The mosquitoes obtained in the arctic region and in the collection in the National Museum at Washington and shown me by Mr. D. W. Coquillett, were specimens of the Culex consobrinus, and Culex impiger. Both of these species came from Alaska. The impiger was taken at Sitka, June 16, Yakutat, June 21, Virgins Bay, June 26, and Popoff Islands, June 8 and 16, in the year 1899. It might be interesting to note that one of these specimens was accidentally found in an old box of paper and doubtless would have been thrown out if its presence had been known. The Culex consobrinus may also be found as far south as New Mexico, while the impiger has been found on the Island of Jamaica, by C. W. Johnson. Specimens of mosquitoes caught near the City of Mexico on Aug. 4, 1900, and sent to me by Dr. Manuel Urbino, of the National Museum of Mexico, proved to be Culex tarsalis and Culex impiger (?). Mr. C. W. Johnson has recently shown me a specimen of Anopheles —resembling a crucians—which was captured in Venezuela.

Whether the Anopheles lives in the arctic regions is not known, but should they do so they are doubtless harmless.

An interesting question to be decided is, where do the mosquitoes in our latitude go during the winter months? My observations can only be recorded for the latitude of Philadelphia. In this city, the Culex pungens were abundant during September and the first two weeks of October of 1899. Toward the latter part of October the females apeared to be more scarce, while the males were abundant, and I could not find the former in the cellar or outhouses as formerly. On December 17, a full-grown female Culex pungens was found in the sitting-room of a residence in the center of the city. It was kept alive for nearly one month. On February 4, another full-grown female pungens was caught in the kitchen of the same residence. The weather for a week previous had been intensely cold, and for a few days the thermometer had dropped to 7 degrees above zero. It had evidently come out to get water, for when caught it was adjacent to a hydrant. In captivity it only survived one week. About April 1, 1900, a few moths, gnats and spiders, with very long brown legs, began to appear, but no mosquitoes. I could not find any in the dark corners nor walls of the cellar, nor on the wooden structures of the house, nor anywhere around the furnaces on April 1. Not feeling satisfied, the greenhouses of the Biological Department of the University of Pennsylvania were visited. A brief description of these houses would be: 1, a vivarium containing tropical plants and standing water throughout the year, and kept at a temperature

of 60 F.; 2, an orchid room kept at 60 F.; 3, an animal-house kept at 60 F.; 4, a cypripedium room at 65 F.; 5, a palm-room at 69 F.; and 6, a stove-room at 89 F. In all these rooms standing water may be found during the winter. A search of two hours in all of these rooms failed to reveal a single mosquito until I had gone into the animal-house, where a full-grown female pungens was found lying flat on the wall and about three feet above some rabbits, and the same distance from a hydrant. It was devoid of blood.

On May 15, 1900, a search of two hours through Horticultural Hall, in Fairmount Park, from the dark basement below to the roof above, failed to reveal a mosquito of any kind. From October to May the temperature in this building ranges from 65 to 70 F. On going into an outhouse immediately adjacent, a young female pungens was found. On May 19, I had no trouble in finding several specimens of full-grown female pungens in a barn in the lower edge of the city and about two miles north of League Island Navy-Yard, a district in which I had treated a case of estivo-autumnal fever the previous fall.

That mosquitoes survive the winter in the climate of Philadelphia, and that they do not necessarily have to migrate to this region, I offer the following data: Full-grown mosquitoes were caught in this latitude during September, October and November, on December 17, February 4, April 24, and a young specimen on May 15. To complete this series the following may be recorded as told me by others: Mr. Coquillett informed me that a specimen of Anopheles punctipennis was found on the snow in Castleton, Vt., on February 1, when the temperature was 6 degrees above zero. Mosquitoes have been found in Washington on December 23 and January 30. Professor Theobald Smith caught a mosquito in Boston during the last week of March. The series is thus complete, and mosquitoes have been found in this latitude during September, October, November, December, January, February, March, April and May. Whether these insects migrate at all I am unprepared to say.

It is said that they do not fly far from their breeding-grounds.

It seems interesting to know that not one male mosquito was found during the entire winter. Marchiafava and Bignami note a similar experience in Italy.

The males were more numerous than the females up to the latter part of October, then disappeared. Of the first brood captured the following May, probably half were males.

All of my mosquitoes were full grown except the specimen obtained May 15; all were Culex pungens; all but one collection were found on plastered brick surfaces; all were adjacent to some kind of animal, and all were in localities convenient to standing water.

According to observations made by different scientists in various parts of the world, it has been demonstrated that not all genera of mosquitoes are capable of inoculating man or birds with malarial fever. This power so to do appears to rest solely with the different species of the genus Anopheles. However, this much has been proved, that birds suffering with malarial fever, Proteosoma Grassii, have been bitten by the Anopheles, and the disease thus conveyed to uninfected birds through the bite of this insect. Further, Grassi and Bignami have raised the Anopheles from larvæ obtained in districts far removed from malarious localities, which mosquitoes have been transported to other places and there have bitten patients suffering with malarial fever and after a certain number of days these same mosquitoes have bitten uninfected men with the result that malarial fever has been produced.

Ross found that within from two to three days after the Anopheles maculipennis—claviger, or quadrimaculata—had bitten birds suffering from avian malarial fever, there developed in the outer muscular coat of the middle intestine certain bodies which had not been found in the middle intestines of other species of mosquitoes, nor in uninfected specimens of the same genus; and within seven to ten days these spores or sporozooids of malarial fever became stored up in the veneno-salivary gland of the insect and in that state were capable of infecting man.

The malarial parasites in the body of man do not take a similar course. Studies of the human blood reveal the presence of certain small, round, actively motile intracorpuscular organisms. These grow to full development at the expense of the red blood-disc, and subsequently rupture, setting free a number of hyaline bodies that at once re-enter other erythrocytes. These results therefore go to show that the sporozoa or plasmodia of Laveran require for their complete existence two biological cycles, one being completed in the body of man, the other being completed in the tissues of the mosquito.

Previous to this time the species of Anopheles used in the experiments on birds and man have been the Anopheles claviger, or more accurately, Anopheles maculipennis. (Lately identified as our Anopheles quadrimaculata.—Howard.) The Anopheles quadrimaculata, or maculipennis—claviger—acording to L. O. Howard, has been found in eight different localities of the United States, as follows: Texas, Florida, Maryland, District of Columbia, Illinois, Minnesota, New Hampshire and New York. The Anopheles punctipennis has been found in nine different localities, namely: Texas, District of Columbia, Maryland, Vermont, Massachusetts, Pennsylvania, New York, New Mexico and Illinois. I have found the Anopheles claviger—quadrimaculata—in at least two localities near Philadelphia and in the Pocono Mountains of Pennsylvania at an altitude of nearly 3000 feet above the sea level. The Anopheles crucians has also been found in this country. Grassi states that he was first to claim that all species of Anopheles were capable of transmitting malarial fever to man.

The genus Anopheles may be distinguished from the genus Culex by the fact that the Anopheles has spotted wings, the palpi are as long as the proboscis, and when the insect rests against the wall the body points outward, forming an angle with the surface on which it rests. The two posterior legs of Anopheles hang downward, and not thrown up over the back as in Culex. The word "spots" as applied to the minute dots or markings on the wings of the Anopheles, signifies very minute round, oval or irregular dark areas on the upper surface of the wings and may be readily discerned by the naked eye, but better with a small hand lens. The dots are due to a thicker growth of hair in these regions.

My studies to determine the anatomy of the mosquito consist of making paraffin sections of the entire insect in serial form, thus cutting the insect into about 600 pieces, and staining with Delafield's hematoxylin solution and eosin; further by dissecting the fresh specimen by means of needles under a dissecting microscope.

In a former paper on this subject, printed in The Journal, Feb. 3 and 10, 1900, the statement was made that regarding the veneno-salivary gland no dissection previous to that of Macloskie was known to the author.

I take this opportunity to say that since examining the literature further I find that Mr. Leon Dufour,[3] in the "Récherches Anatomiques et Physiologiques sur Les Hemepterics," Paris, 1833, has shown a chart of the dissected mosquito, as has Mr. Felix Arribalzagas in "Dipterologia"[4] (Argentina), 1891.

Marchiafava and Bignami have had Anopheles to bite patients suffering with malarial fever, and, killing the insects from day to day, have studied the whole life history of the parasite outside the human body. For the development of the sporozooids of the different forms of malarial parasites they found that it was best to keep the insects at a constant temperature ranging from 68 to 86 F. After the seventh day they found the spores accumulating within the salivary glands of the mosquito and were then in a fit condition to inoculate man.

Since the conditions seem to require that the temperature be a somewhat high one, this fact might in a measure prevent the development of the malarial parasites within the tissues of the mosquito in arctic regions. (The isothermal line near the arctic circle for the most part remains at 10° F.). It might explain the absence of malarial fever in regions near the north pole. On the other hand, all the necessary conditions are fulfilled in tropical climates, and here also may be found all varieties of malarial fever throughout the entire year.

As has been previously stated, it has been proved that all kinds of mosquitoes are not capable of inoculating man with malarial fever. This power has so far been proved to rest alone with the Anopheles, the exact reason for which must be solved by future workers. Its solution will doubtless be explained by finding certain differences in the anatomy, the function, or the habit of these insects. Whether there is a difference in the structure of the mouth parts, stomach, middle intestine, circulatory system, salivary glands or its secretions, are questions still *sub judice*. In answer to this question, Grassi has stated that it might be due to the rapidity with which the blood may be digested by the Anopheles, that is, twenty hours sooner than in Culex.

In many regions of this country proof that malarial fever may be inoculated has been a revelation to the physicians of those districts. It also furnishes proof positive of the value of experimental knowledge combined with clinical experience. Clinical experience, be it remembered, is only a form of observation, and will never furnish more than half proof. Proof consists in *observation confirmed by experiment.*

Speaking as one who formerly lived in a malarial district of the South, I shall make the statement that owing to the manifold causes and intermixture of effects which surround this question, it is absolutely impossible for clinical experience to unravel the thread which entangles the question of the etiology of malarial fever. This does not apply alone to malarial fever. Is it not so in all the other infectious diseases? The physician, according to my experience, questioning the patient suffering with malarial fever can not elicit the absolute evidence for which he searches. In over 75 per cent. of the cases the patient will state that he has slept in a region adjacent to water, in a low, damp place, or in an open house, and that he has been drinking water from shallow wells, or, worse still, creek water. Farther than this the mind of the patient will not go. His knowledge only extends to the time when the bilious spell came on, or perhaps the initial shiver.

Several years ago, before the full development of the inoculation theory, I undertook by close questioning to learn, if possible, how patients contracted their chills. The whole evidence led to a labyrinthine skein from which it was impossible to unravel any safe conclusion. Some patients told me positively that they did not drink creek water, but only water from wells or springs, and that they at night slept in open houses. The majority perhaps told me that they had both slept in open houses and drank creek water, or water from shallow wells. Instances have been cited in which expeditions have gone into malarial districts without drinking creek or well water and that they had no chills. And from this the conclusion is reached that infection forsooth must take place through the gastrointestinal tract. One may well ask, what about infection through the inspiratory tract, and also about the question of immunity at that definite time? By whichever road one may travel at least one of them leads up to that monument of proof furnished by Ronald Ross, Marchiafava, Bignami, and Koch, that the spores of the malarial fever may be inoculated into the blood of man through the bite of the mosquito.

As to the stamping out of malarial fever various methods have been advised. If the mosquito is to be exterminated in temperate climates, which at the present time seems an impossible task, there may be two periods in which it may be assailed. One would be to kill off the adult and fertilized females during the periods of hibernation, a period in which there are least of them, and secondly to get rid of the larvæ especially during a few brief weeks of early spring. The most direct way of eradicating malarial fever is to isolate all the cases by means of mosquito netting and the judicious administration of quinin.

So far as the Culex pungens is concerned, a very great deal might be done toward limiting its multiplication by giving strict injunctions to the housemaid not to permit stagnant water to remain in pails or buckets about the premises. Another plan would be to point out to boards of health the danger lurking in stagnant water wherever found. The larvæ of Anopheles have been found by Marchiafava and Bignami[2] in stagnant water, and in winter they have found the fertilized females hibernating in caves.

Different drugs and chemicals have been recommended for the destruction of the larvæ of mosquitoes. A culicicide to be of any service must undoubtedly possess many qualities: 1, it must be easily obtained everywhere; 2, it must be inexpensive; 3, when used it must lie on the surface of the water for long periods of time in order to prevent the deposition of eggs by the female; 4, it should be non-poisonous; and 5, it must kill the larvæ or pupæ of the mosquito.

On the morning of May 22, 1900, I found about 100 larvæ of the Culex pungens in an old paint-bucket in the yard of a residence in Philadelphia. These were nearly all in the same stage of development. After their development into pupæ, I decided to make the following experiments with chemicals calculated to destroy them. The experiments thus made consisted of: 1, a strong solution, 120 grains of tobacco to the ounce of kerosene oil (the tobacco to macerate in the oil for 24 hours); 2, a saturated solution (240 grains to the ounce) of camphor in kerosene oil; 3, a saturated solution (80 grains to the ounce) of naphthalin in kerosene oil, and 4, kerosene oil. Two round glass jars were selected, having a diameter of 7 inches (18 centimeters), a circumference of 21½ inches (52 centimeters), and holding a half gallon (2 liters) of hydrant water. Into each glass jar four of the above-described pupæ were placed, one series to be used for the experiment, the other containing the control pupæ.

(The mosquito seems easiest destroyed in the pupa stage since the larvæ may frequently be seen to prevent closure of the breathing tube by biting off the occluding substance.)

Experiment No. 1. Tobacco and kerosene oil experiment: The pupæ on which the experiment was begun were disturbed so as to cause them to fall to the bottom of the jar and on the surface of the water was floated one drop of the tobacco-oil solution. At the end of eight minutes no effect whatever was produced. Now adding three more drops of the solution, all pupæ were practically dead at the end of one hour. The control pupæ remained active.

Experiment No. 2. Camphor-oil series: The jar was now rinsed out carefully until no odor of oil could be detected and four fresh pupæ were placed in the vessel containing a half gallon of hydrant water. The jar was shaken to cause them to sink to the bottom and two drops of camphor-oil solution added. Twenty minutes later no effect was observed. At this time two more drops were added and eight minutes later all the pupæ were sick and were all practically dead at the end of thirty-five minutes. The control pupæ were active.

Experiment No. 3. Naphthalin and kerosene oil series: Four fresh pupæ were placed in the cleansed glass jar containing a half gallon (2 liters) of water and the vessel agitated to cause them to sink, and two drops of naphthalin solution added. Five minutes later one pupa was dead while the other three were active. Eleven minutes later two more drops of naphthalin solution were added and at the end of thirty-seven minutes all the pupæ were practically dead. The controls were in good condition.

Experiment No. 4. Kerosene oil series: Into the cleansed jar containing half a gallon of water were placed four fresh pupæ. After causing them to sink, four drops of kerosene oil were added, with the result that all four pupæ were practically dead at the end of tweaty-seven minutes. The control pupæ remained in good condition.

It was evident that four drops of kerosene oil without any other ingredient whatever, acting for a period of from 1 to 37 minutes on four mosquito pupæ contained in a glass vessel 21½ inches in circumference and containing half a gallon of water, was as destructive as kerosene oil containing tobacco, camphor, or naphthalin dissolved in the above-named proportions.

Not feeling satisfied with these experiments and thinking that a smaller amount of one of the combinations might be of greater potency, acting through a longer period of time, I followed the same line of experiments, only this time adding 1 drop of each solution and allowing it to stand from six hours to a longer period. The result proved that the addition of 1 drop of the camphor-oil, or 1 drop of the naphthalin and kerosene oil, or 1 drop of plain kerosene oil produced no effect at all, while the tobacco-oil killed all four pupæ within a period of two hours. The control pupæ which had been used throughout all these experiments remained in the best of condition. To these were added 1 drop of tobacco-oil solution, which produced death in all of them within a period of five hours.

Carrying my experiments still further, I placed four control pupæ in a tub 2 feet (61 centimeters) in diameter and 70 inches (177 centimeters) in circumference, and about 4 inches in depth, and also four pupæ in a similar tub, each of which contained four gallons (8 liters) of hydrant water; to the latter series 6 drops of tobacco-oil solution were added, which caused death to all of them within 4½ hours. The control pupæ remained in good condition during the experiment, and three of them were later killed by the same solution. The fourth one positively refused to die, and after development was given its liberty. Making a rough calculation, the amount of this tobacco-oil solution to be applied to an acre of water for the destruction of the mature mosquito pupæ contained, should be said to be from 44 to 60 ounces. It would be best to renew this fluid every three or four weeks. Frequent agitation aids the fluid in spreading on the surface of the water.

Should the mosquito be the only agent in disseminating malarial fever, the destruction of the larvæ or pupæ of that insect would be only one way of getting rid of the disease. When one realizes that according to Manson 5,000,000 British subjects die each year of malarial fever or its complications, the question assumes mighty proportions. How many die of this disease in the United States I am not prepared to say. They at least run up into the thousands. Regarding the stamping out of the disease in any country Manson suggests the following methods: "1, to begin by administering quinin for long intervals to all cases of malarial fever, since a single man is a source of infection to a whole locality; 2, to cause all persons suffering with malarial fever to sleep under mosquito netting; 3, to compel all the uninfected to sleep in mosquito-proof houses or beds; 4, to kill by different culicicides all mosquitoes entering houses; 5, to destroy all the mosquito larvæ before they reach maturity or the biting stage—to which might be added the destruction of the adult mosquitoes in their places of hibernation—and 6, a combination of all these methods."

[Microscopes for demonstration of sections of mosquitoes at the Atlantic City meeting were loaned through the kindness of Messrs. Queen & Company, Philadelphia.]

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# THE ATROPHIC PHARYNX.

RALPH W. SEISS, M.D.

Professor of Otology in the Philadelphia Polyclinic; Consulting Laryngologist to the Pennsylvania Institution for the Deaf and Dumb.

PHILADELPHIA.

The literature of the atrophic stage of chronic pharyngitis may be generally classed under the term vague. Writers appear to know or care nothing about the pathologic anatomy of the condition and its relationship to other forms of pharyngeal inflammation seems to be generally ignored. The old term "pharyngitis sicca" is a clinical one, used at random for any form of dryness of the pharyngeal mucous membrane, and bears no relation to any definite form of disease.

All types of simple chronic inflammation of the pharynx tend to progress into the atrophic form. What might be called the average type of chronic pharyngitis is characterized by the enlargement of the lymph-glands, giving the so-called follicles, by dilatation of the superficial blood-vessels, and especially by the formation of small masses of granulation tissue, which are usually situated immediately behind the posterior half arches of the palate. Atrophic areas, showing as sunken, glistening, light-colored spots, occur in the central portions of the pharyngeal wall. Such a throat may re-

*Presented to the Section on Laryngology and Otology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

main *in statu quo* for half a life-time, seeming hardly to progress, yet never growing better, and giving but a minimum of discomfort. But in a certain number of cases, sometimes dependent on causes known and measureable, but more often for reasons unknown, the chronic interstitial inflammation steadily extends, the areas of granulation tissue become more extensive, and the greater portion of the pharyngeal surface is infiltrated.

The pathologic process is identical with fibrosis elsewhere, the persistent migration and aggregation of leucocytes, their fibrillization and slow conversion into new connective tissue, and the contraction and extension of this formation, with resultant pressure atrophy. In advanced cases the process extends until most of the important structures of the pharynx have been replaced by the fibrous tissue, and the anatomical relations and functions of the organ have been more or less materially changed.

The etiology of this disease, like that of fibrosis elsewhere in the body, is almost unknown. Gouty subjects are certainly more prone than others, and extensive atrophic changes are always present in advanced cases of chronic lithemic sore throat. But it occurs apparently at random among patients of all types, and one might almost say of all ages, and sometimes fails to be present where most positively expected. It follows sclerotic rhinitis, but may exist where the nasal lesions are but slight. Not rarely I have seen it swiftly follow extensive and repeated destructive intranasal operations, but these cases are fortunately now much more rare than they were a few years ago, when the galvanocautery was more popular than at present. In a certain number of cases it is rapidly lighted up by an attack of diphtheria, typhoid fever, or measles, and in many subjects it appears to be distinctly inherited. The clinical history of the atrophic pharynx is that of years of throat fretting, latterly growing decidedly worse. Dry throat, itching, tickling and resultant cough, choking while eating, dull pain which may radiate into the larynx or up toward the Eustachian tubes, and interference with voice, are the commonest symptoms. From the extension of the disease in the larynx, dysphonia is always a prominent complaint in advanced cases. The voice is weak and without staying powers, requiring great nervous and muscular effort to talk or sing for any length of time. Vocal resonance is lacking, and the voice may be called thin, while a constant sense of irritation is produced by its continuous use. The appearance of the atrophic pharynx on inspection is characteristic and unmistakable. Normally, the posterior pharyngeal wall, as viewed from the front with the tongue properly depressed and the part illuminated, is somewhat concave, the surface is slightly rugose, and the color resembles that of the general buccal lining. The atrophic throat, on the other hand, shows a somewhat convex posterior wall, the glandular and muscular elements having disappeared and the centra of the cervical vertebræ pushing the mucous membrane forward in the median line. The surface is absolutely smooth, glistening, and tightly adherent to the tissues beneath. There is generally a line of nearly white or yellow tissue immediately behind the posterior half arch, and the distance between the border of the pendant soft palate and the posterior pharyngeal wall is abnormally great. Engorged and varicose veins may traverse the pharyngeal membrane in any direction, but are especially prominent close to the tonsil and posterior half arches; they are due to cicatricial tissue pressing on the veins and preventing proper return of blood from the part.

The postnasal and laryngeal regions always participate in the general destructive process. Rhinoscopy is easy, and shows the pharyngeal vault to be abnormally large, light colored, and smooth in outline. The Eustachian prominences are pale and contracted, and tubal changes with a greater or less degree of middle-ear sclerosis are almost constantly present. The larynx is noticeably light colored, and the aryepiglottic folds are more or less thinned. Chronic tracheobronchitis is a common concomitant or result in middle or advanced life.

In the nature of things treatment of atrophic organs must always be unsatisfactory so far as restoring their function is concerned. The calm assurance with which practitioners proceed to "cure" diseases due to hopeless alteration of organs is one of the dreary spectacles in medicine. No fibrosed tissue ever returns to a normal condition, no organ so affected can carry out its functions with normality.

The possibilities of treatment in the present state of our knowledge in atrophic pharyngitis are limited to palliation and perhaps arrest of progress. The essentials are to control the migrations of leucocytes and to obtain hyperactivity of the remaining normal tissue element. To bring about this result, stimulant and alterative sprays, such as oil solutions of gaultheria, cinnamon, cubebs, thymol and the like, are certainly of benefit. They should be applied generally by the physician himself, and only to a membrane which has been carefully cleansed by an alkaline spray. Cases of atrophic pharyngitis are generally either markedly irritable or unusually tolerant under treatment; the former class are naturally much the more favorable, and much more satisfactory therapeutic measures can be carried out. The massage effect of properly chosen atomized fluids when driven with a pressure of from 15 to 18 pounds is very decided and most beneficial. The tip of the atomizer should be held about one inch away from the mucous membrane, and the jet steadily and rapidly carried over the entire surface.

In the irritable cases much less can be done, and spraying may have to be limited to inhalations with the tip of the instrument outside the mouth. Pigments applied with the applicator and tightly rolled cotton mop often seem to give more definite results than nebulæ. Thymol solution in alcohol and glycerin, tincture of sanguinaria and glycerin, and copper sulphate, are favorites with me; iodin is sometimes useful. In tolerant subjects much valuable massage can be given by rhythmic and gentle patting of the whole membrane with the medicated mop; if retching, cough, and discomfort result, the method is likely to do more harm than good. Best of all methods of massage and stimulation is the faradic current, the positive pole being applied to the pharynx while the negative is held in the hand of the patient. Many cases will tolerate a séance of two or three minutes with undoubted good result; irritable subjects are best treated by applying the rheophore to the palate and roof of the mouth only. Powders, caustics, strong astringents, and especially silver nitrates, I regard as only injurious in this disease, their use almost always hastening the fibroid process. Operative measures have not been advised by even the most radical of special surgeons; we need to replace tissue, not remove it, and if surgical procedures are necessary for any incidental nose or throat conditions, they should be undertaken with the greatest caution, as every cicatrical area undoubtedly acts as a fresh center in the fibrosis. Palliatives intrusted to the patient may consist of

eucalyptus and menthol oil-sprays, lozenges of elm and lettuce, and possibly a sedative gargle. The good effect of the latter is probably entirely due to the necessary muscular action in gargling and not to the medicinal agents employed. Medicated steam inhalations from a really efficient steam atomizer give great comfort, and have some permanent limiting effect on the disease; their use can be continued for months. Internal medication is but a weariness to the patient, so far as altering the diseased throat is concerned; but good hygiene is, of course, necessary, and the correcting of pernicious habits, especially among them the inhaling of smoke, is often absolutely necessary to secure any symptomatic improvement.

Very great comfort extending over long periods and indefinitely prolonged by occasional treatment may certainly be secured by the therapeutic measures outlined in atrophic pharyngitis. The voice will increase in power, the disagreeable sensations lessen or disappear, and the most dreaded sequelæ, sclerotic otitis and chronic bronchitis, may be prevented. But too much must not be hoped for, for patients must be frankly told that their condition is not definitely curable, and accuracy in diagnosis of the actual pathologic factors at work is essential.

DISCUSSION.

Dr. W. Freudenthal, New York City—I am very much interested in Dr. Seiss' paper and would like to make a few remarks on atrophic pharyngitis and rhinitis. You can not separate the pharynx from the nose, especially in these cases. The principal symptom in atrophic pharyngitis and atrophic rhinitis is a dryness of the throat, and this is a most important factor. I wrote a few years ago on this topic, and my theories are now acknowledged abroad by a number of men, although I have not heard anything about it in this country. The dryness arises largely from the atmosphere we inhale. The atmosphere of New York, for instance, in winter is entirely too dry, and when it sinks below 40 degrees it is injurious. I have measured for years the dryness of the atmosphere in New York in the houses and schools, and I have often found a relative humidity of 20 per cent., while the highest was only 25 or 30 per cent. The colder the outer air is the more we heat our furnaces and the more hot dry air is driven into the rooms. The air in the furnace is heated and thoroughly dried and the more that is driven into the rooms the more we inhale of it. For a while the nose and pharynx can stand it, but when the rest of the body can not supply the pharynx and nose with sufficient moisture, there sets in at last what is called a dry atrophic pharyngitis and rhinitis. This condition affects mostly the nose, but in the cases where the nose is stopped up the patient will inhale much more with the pharynx, and the dryness will affect the pharynx chiefly. We should expect this to occur especially in children with adenoids, but since the process requires years and years to develop we find atrophic pharyngitis most frequently in older people.

The Doctor spoke of the effect of the spray. That is very good and very true. But why not apply massage directly? I devised a few years ago a vibrator and it works very well.

Dr. J. Holinger, Chicago—There is a diversity of opinions as to dry pharyngitis. The fact is that so far we have no intelligible explanation for the pathology of the whole picture. The dryness and moisture of the air, the bacteria and all the other factors are present in people who never had and never will have an atrophic rhinitis or an atrophic pharyngitis. These two diseases, together most probably with a third one, that is, with pachyderma of the larynx, form one group of diseases. One or another of the combination may be lacking; most often it is the pachyderma, but it is wrong to speak of one and ignore the others. In a patient I am now observing all these morbid conditions and their close relations are quite clear. A short while ago I read a paper before the Chicago Laryngological Society, in which I spoke of this matter. In this case the two nostrils are not equally wide. From the left one, which is very wide, I have constantly to remove accumulation of crusts, while in the other nostril a big ridge is present, which I think is responsible for the comparatively moist condition and the little accumulation of crusts in that side. He has one-sided ozena, dry pharyngitis and pachyderma of the larynx. This class of cases led Liebermann to compare the noses of patients with atrophic rhinitis and of normal patients by measuring the skulls. A mention of that work is made in one of the latest numbers of the *Laryngoscope*. It was proved beyond all doubt that by far the greater number of cases of atrophic rhinitis, something like 97 or 98 per cent., occur in people with broad faces, combined with the low nose. By "low" is meant from the forehead to the mouth. At the same time these people have a wide nose. These are the congenital cases or the inherited cases of atrophic rhinitis. They are usually combined with dry pharyngitis. The acquired forms have as yet no direct explanation. The atrophy of the turbinals, especially of the bony turbinals, shows there must be a process that causes the bone to shrink. There may be something similar to chronic osteomyelitis of other bones. Thus, it is possible that the explanation of the whole picture of atrophy of the mucous membrane of the pharynx and turbinals and turbinal bones is nothing else but the scar retraction after submucous or interosseous inflammatory processes and that the change of the epithelium is similar to the change that we found long ago in old fistulous tracts. The inflammatory processes would run their course in childhood, where we see often pus discharges from the nose.

The text-books treat these diseases as diseases of the mucous membranes of the nose and pharynx, and we all know that in atrophic or dry pharyngitis and rhinitis the submucous tissue and even the underlying bone suffer just as much or more than the mucous membrane.

Dr. H. Stillson, Seattle, Wash.—I am very much interested in the pathology of the disease, and since Dr. Seiss has asked for a kind of experience meeting on the question of treatment, I wish to refer to a method of treatment that I advocated about 15 years ago. I wrote at that time to Dr. Bosworth and asked him if he had attempted to teach patients to cleanse the mucous membrane of the pharynx by means of the tongue. He said he had in his experience seen very few patients who were able to insert the tongue into the naso-pharynx. I wrote also to Dr. Solis-Cohen, and he said he had seen very few patients who would become able to do that, and he himself when he attempted to do it, found it very difficult. I have found patients able with the moistened tongue to cleanse the naso-pharynx. Then they can medicate it with the saliva or with some medicine they carry with them. They can do this without injury. I have discovered no deleterious effect from it. They can certainly cleanse the pharyngeal orifice of the Eustachian tube. They can stick the tongue into the nose, and I had one boy who could protrude the tongue entirely through the nose and wiggle it at you through the anterior orifice. My observation is that boys and ladies are able to learn this movement of the tongue much better than others. There are certain pathological conditions that render it very much more difficult, for instance, adhesions of the soft palate with the tonsils or cicatricial contraction of the pillars of the fauces. One advantage of this method is that the tongue has its own intelligence and can hunt out the little granulation tissue and confine its massage movement to the tissue that needs it most. It is able to carry the medicine intelligently to the granulation tissue. Along with the pharyngeal process there is a similar process along the upper wall of the soft palate. Often there will be a growth of granulations here, to which the tongue is able to carry the medicine and apply it. The tongue is able to apply massage to the posterior end of the turbinals, and in the early stage of this disease there is very often hypertrophy along with atrophy, and hypertrophic tissue may be found beside the atrophic tissue.

Dr. C. L. Richards, Fall River, Mass.—While admitting with Dr. Seiss that the dry atmosphere may be a factor, I have found the condition to occur often in workers in cotton mills, in which the air is necessarily of considerable humidity in order

to work the threads. These people have the disease as marked as you see it anywhere, notwithstanding that for twelve months in the year they work in an atmosphere with if anything more than ordinary humidity.

DR. C. M. COBB, Lynn, Mass.—There are several very peculiar things in connection with atrophic conditions of the nose and pharynx. The typical atrophic pharynx is not a pharynx with the crust formation. The atrophy of the nose, if we begin with that part of it, is a very curious formation. The atrophy does not take place where the disease is. The disease and crust formation are around the middle turbinate, which is the last place to get well and the first to become affected. If I understand Dr. Freudenthal, he claimed that the air in the furnace is heated and the moisture is driven off. As I understand it, in the furnace the cold air passes over the hot iron and the temperature of the air is raised, but there is just as much moisture in the atmosphere after it is heated as before, although there is less relative humidity. Another thing is the escape of carbonic oxid from the hot iron, which may be an important point. It may be an irritant to these patients. Furthermore, in regard to irritation, it hardly seems probable that directly, or indirectly for that matter, mechanical irritation produces a disease of that kind. Mechanical irritation does not anywhere else in the body produce atrophy or an atrophic condition. For instance, a man working on the street may get thickened epidermis all over the hand, but the hand will not atrophy. The broadening of the face seems to me as much a result as it is a cause. A person who has atrophic rhinitis from childhood, or in other words, a person who has purulent rhinitis as a child, and this condition follows, may have the broad face because of the nasal disease, and then as it grows older and the bones develop the face is relatively broader. The cases often get well at that time, because the broadening of the face gives them more room to breathe, and better drainage from the sinuses. A very curious case of atrophic rhinitis occurred in my practice the other day. I saw a child 10 years of age, with none of the surroundings in which we would expect a case of atrophic rhinitis to originate. The child had atrophic rhinitis following an infantile vaginitis. The people supposed that the disease had migrated from one place to the other, and I have no doubt that it did so, with assistance, the contagion being carried from one place to the other.

DR. EMIL MAYER, New York City—As germane to the subject under discussion I would like to mention as a therapeutic hint the happy effect I have seen from the application of carbolic acid and glycerin to the pharynx, in a 12 per cent. solution.

DR. HOLMES—I would like to ask Dr. Mayer if he begins with a lower per cent.

DR. MAYER—No. I use a 12 per cent. solution at once.

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## THE PRESENT STATUS OF OUR KNOWLEDGE CONCERNING THE BACTERIOLOGY AND SERUM TREATMENT OF DIPHTHERIA.*

SAMUEL E. ALLEN, M.D.
CINCINNATI, OHIO.

Although we may not consider this subject as exactly fitting for the deliberations of this Section, still diphtheria is to a certain extent a throat affection, and as such its discussion has a place here. The subject offers something a little different from the ordinary run of topics which engage our attention, and for that reason, on the advice of our Chairman, I take the liberty of introducing it here. It is not my intention to treat the subject from a practical standpoint, but rather to touch on the scientific advances which have been made by the bacteriologists and those engaged in working out the problems connected with serumtherapy. An enormous amount of work has been done and is being done along these lines, and an account of the latest theories advanced, even as imperfectly as given here, can not fail to be of some profit to us. The subject naturally divides itself into two phases: the first concerning diagnosis, and the second including the intensely interesting questions of immunity and serumtherapy. The diagnosis of diphtheria can not be considered as scientifically confirmed without the demonstration of the presence of the Klebs-Loeffler bacillus. No one is now content with a clinical diagnosis alone, because we know that other etiological factors may be concerned in the production of what is pathologically a diphtheritic membrane, for example, the material in crypts of the tonsils in lacunar tonsillitis. Baumgarten, who has studied many true diphtheritic membranes, states that in his opinion streptococci are often the cause of the membrane, and the diphtheria bacillus of the general intoxication.

At the present day, the Klebs-Loeffler bacillus has as distinct a position in the etiology of diphtheria as has the tubercle bacillus in that of tuberculosis. The recognition of the diphtheria germ, however, presents difficulties not met with in the direction of tubercle bacillus. Recognition of the tubercle bacillus is exceedingly easy. An absolutely accurate and positive determination of the diphtheria bacillus is very difficult, requiring time and considerable knowledge of bacterial technique. Under ordinary circumstances the appearance of simply stained specimens from an eight to twenty-four hour culture on Loeffler's blood-serum mixture is sufficiently accurate for practical purposes; but that we are able to recognize the bacillus positively by such simple means is far from the case. Diphtheria bacilli are no doubt definite specific organisms, but with such variations as to shape, size and arrangement, that we are almost justified in speaking of them as the group of diphtheria-producing bacilli. Let any one make fresh blood-serum cultures of the bacilli from different hygienic stations or bacteriological laboratories and he will find marked differences. Again there is a group of organisms often found in the throat and elsewhere that resembles the diphtheria group so closely as to be indistinguishable from them, and differing only in being non-pathogenic. To this group, which now includes the so-called Xerosis bacillus, the name "pseudodiphtheria" bacilli has been given. There is no absolutely reliable quick way of differentiating between them, the test of pathogenesis being the only sure one. In recent years many attempts have been made to devise quick differentiating methods. The most favorably considered is the method of double-staining devised by Neisser. The organisms are first stained with acetic acid methylene blue and then with an aqueous solution of bismarck brown. The bacilli present brown protoplasm and blue polar granules, the so-called Babes-Ernst bodies. Neisser and Fränkel claim the test to be absolutely accurate, if 9 to 24-hour-old cultures on Loeffler's blood-serum mixture, grown at a temperature between 34 C. and 35 C., never above 36 C., are used. That this method is certain is disputed by many competent observers, among them Loeffler. Up to the present day we may say that the variations of neither the true nor pseudo group have been accurately determined. As the disease presents a definite clinical picture while the organisms vary, this variation is probably due to differences in the soil. This much we can at present say of the diphtheria bacillus. It is a bacillus subject to as yet undetermined variations. It can not be absolutely differentiated from the pseudo group.

*Presented to the Section on Laryngology and Otology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

except by animal experiment. In practice a reasonably accurate quick diagnosis can be made in nearly all cases. We are more likely to overlook germs when present than to err on the side of an affirmative diagnosis.

We now come to questions of immunity and serum-therapy. It is in the cure of diphtheria that the result of scientific research into these obscure fields has been of the greatest practical worth. Bacteriologists have been trying to work out a theory as to what happens when an animal is made immune by repeated injections of toxins, and as to the real nature and working of the substances—antitoxins—which appear in the blood of an animal so immunized. There has never been any very satisfactory theory offered as to the cause of either natural or artificial immunity until Ehrlich a few years ago formulated his very original theory. According to him, no animal can be inoculated with a bacterial disease unless it has in its body-cells a substance capable of combining with the bacterial toxins. This act of union between this substance in the cells and the toxins gives rise to the fever and other general symptoms of the disease. This substance he considers a sort of side-group in the molecules of the cell and serves to fasten the toxin, altered by the combination, in the cell. Natural immunity, while it may be due partially to phagocytosis or to the germicide properties of the alexins of Buchner, is, according to Ehrlich, in a large measure due to the absence of this side-group or side-chain of molecules, this so-called "Giftbindende Substanz." We can get at the theory best by applying it to the disease diphtheria. The organisms begin development in the throat of the patient; aside from the local inflammatory effect, virulent toxins are produced and absorbed. These toxins combine with the "Giftbindende Substanz" in the cells, and the act of combination causes such a cellular change as to produce the fever and other symptoms of diphtheria intoxication. If the toxins are produced in large amounts the reaction will be such that death results; the cells are too severely damaged to admit of further physiologic function. If, however, the poison is less in amount or the physiologic resistance of the cells relatively greater, further cellular activity is not inhibited, but the cells are stimulated and an effort is made by nature to restore the "Giftbindende Substanz" used up in combining with the toxins. Nature here, as elsewhere, in accordance with known physiologic laws, not only reproduces but overproduces the "Giftbindende Substanz" used up, and the overplus is taken up by the blood. The overplus is then available for immediate combination with the toxins, being produced from the local focus in the throat, and renders them innocuous. The disease becomes in this way self-limited and recovery takes place. The self-limitation of infectious diseases is due, according to this theory, to the overproduction and absorption into the blood of the very same cellular substance which while still in the cell allows of the general reaction of the organism to the infectious toxin. Diphtheria antitoxin is nothing but this "Giftbindende Substanz" produced in overplus and taken up by the blood. The self-limitation of an infectious disease and its cure by the injection of ready-made antitoxin are similar processes. In the first instance the antitoxin which limits the disease is produced within the patient; in the latter, the antitoxin is introduced already formed. Antitoxin is a substance normally present in the animal cells, which allows of the combination of toxin with the cells and the production of the disease, but which, when in superabundance and in the blood, there combines with the toxins, and hence renders them innocuous—a similia similibus theory of the first rank.

Such a principle of cure as this is isopathic. Medicine has invented many so-called principles of cure: the allopathic principle, where the disease is to be cured by the administration of a remedy whose physiological action is opposed to the symptoms of the disease; the etiological principle, where the remedy is directed toward the destruction of the cause of the disease and nature is left to herself after the cause is removed; and, as the latest development of our knowledge, this isopathic curative principle. The various infectious diseases can not be treated on the etiological principle, because we have found that the animal cells are more sensitive to the various disinfectants than are the cells of bacteria; hence the bacterial cells can not be killed by anything short of a quantity which would destroy the animal cell. The isopathic principle is the one from which we are to hope for a solution of the problems of infectious diseases. How often are we forced to recognize the truth that there is nothing new under the sun? Hippocrates said: "That which produces a disease also cures it."

Giftbindende Substanz—antitoxin—is not antitoxin until it gets into solution in the blood; consequently antitoxin has no effect on toxins already combined with the cells, and can do nothing toward remedying the evil effects of such combination when once formed. All antitoxin can do is to neutralize toxins before they get to the cells. Hence, the practical necessity of employing antitoxin early in the course of the disease. The process of immunizing becomes under this theory but a process of cell stimulation; the repeated and ever-increasing doses of toxins injected stimulate the cells to the overproduction of large amounts of antitoxins. For the production of the antitoxin, either that needed to limit the course of the infectious disease, or that which we desire to obtain in large amounts for serum-therapy, it can be readily understood that a nice poise between the amounts of toxins and the cellular resisting power of the animal must be maintained. Let the toxins be relatively too strong and cellular activity is stopped; let them be too slight in amount and the stimulation is not sufficient to produce any overflow into the blood. Take a disease like tuberculosis; here the toxins are so small in amount or slight in toxic effect that no antitoxins are produced, and the disease steadily progresses. Lately, Behring has been able to immunize cattle to tuberculosis by using injections of enormous amounts of tubercular toxins. From the blood of such animals he obtained an antitoxin which prevents tuberculosis in guinea-pigs. This theory of Ehrlich carries with it, of course, the idea of a direct chemical union between toxin and antitoxin. Buchner, Roux and their adherents still cling to a cellular theory of the action of antitoxin upon toxin, claiming that the agency of the living cell is a necessary factor in the action of antitoxin upon toxin.

Ehrlich's well-known experiments with the vegetable poison ricin indicate, at least, that the chemical theory is the correct one. Animals can be immunized to ricin and an antiricin serum obtained. Ricin has the property of precipitating in a peculiar manner the red blood-corpuscles of defibrinated blood. This is purely a chemical phenomenon. When ricin and antiricin are mixed in a test-tube, the mixture loses this coagulating and precipitating property. Ehrlich claims that a sort of double salt is formed by the union of ricin and antiricin, this double salt not having the properties possessed by ricin alone. Just this sort of a combination, it is rea-

soned, takes place when any antitoxin acts upon toxin. If toxin, in producing a disease, combines chemically with a cellular substance, then, in the cells specially affected, we should not be able to find any toxin. This point has been investigated in tetanus. Tetanus toxin affects the cell of the central nervous system. This has been proved by direct examination post-mortem. Now, when the body of an animal dead from tetanus is examined for toxin, it may be found in the blood and various organs, but not in the central nervous system. That portion affected by the poison is the only portion absolutely free from it, showing that a combination of the toxin and cellular substance must have taken place. The above theory is the latest and most generally accepted one concerning diphtheria immunity and serum-therapy.

As far as the practical results of antitoxin treatment are concerned, it is almost universally admitted that the mortality has been reduced nearly two-thirds. Cases still die, as we must expect when we consider the theory on which the action of antitoxin is based. A great point in the therapy is to employ the serum early, before damage is done, because antitoxin does not repair destruction already accomplished. Antitoxin simply neutralizes toxins produced after its introduction; repair and cure are left to nature. We may expect always to find some individuals so sensitive to the diphtheria toxin that the initial amount absorbed during the first day or so of the disease will be sufficient to cause death, and we must therefore expect a certain percentage of deaths. Another cause of failure, is the injection of too little antitoxin. At least 2000 units should be used and repeated every twelve hours if necessary. Any harm done by antitoxic serum is due entirely to outside substances in the serum, and the more carefully this is prepared, the less liability of trouble. Now-a-days we get perfectly reliable serum, and as improvements in its production and preservation are made we hear less and less of the various undesirable complications. Antitoxin as a chemically pure dry substance would be the ideal.

The immunity produced artificially by inoculation with toxins or by injection of antitoxic serum is short-lived. The "Giftbindende Substanz" in the blood, on which the immunity depends, is soon excreted and gotten rid of. Protective inoculation does not last above three or four weeks. When large doses are given, excretion is more rapid and the duration of immunity hardly as long. We are indebted to bacteriology for this new principle of cure, this *isopathic curative principle,* and from its development, if it shall stand, we are to expect great things for the future.

## EPITHELIOMA.

REPORT OF TWO CASES—ONE OF SLOW AND THE OTHER OF RAPID GROWTH.

CHARLES J. WHALEN, M.D., LL.B.

CHICAGO.

The first case represented by the accompanying cuts is of especial interest, as showing how long an epithelioma may remain superficial, and it is also of some interest because of the superficial metastasis which was marked before death.

M. G., 85 years of age, widower, first consulted me May 25, 1897, desiring to be relieved of the severe pain radiating from the extensive ulceration about the right orbit, as represented in Fig. 1. The pain he described as being very severe at times and lasting in the neighborhood of sixty minutes, when it might disappear only to return again some hours later, or it might not reappear again for twenty-four or forty-eight hours.

The trouble on his face is said to have started from a scratch on the nose with a rusty nail twenty years before. The scratch never healed, but it remained very small and seemed to be stationary for a trifle over four years. At the end of that time it began to grow slightly, and up to three years before his first visit to me it had only acquired a size equal to about the diameter of a quarter of a dollar. One year before I saw him it involved the upper part of the lower eyelid. From that time until he first visited me its growth was very rapid. At my first examination, I found it had completely destroyed all the soft parts from the supra-orbital ridge to a horizontal line extending 1¾ inches

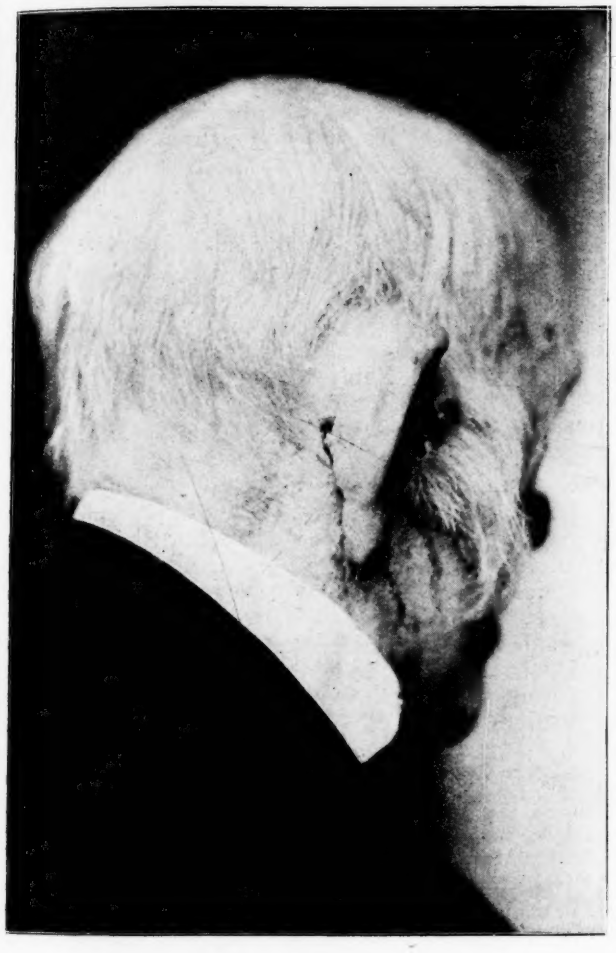
from the ala nasi. It had also extended across the bridge of the nose to the inner canthus of the left eye and down the nasal bones and involved all the soft parts of the nose over the right side and to within 1.25 centimeters of the ala of the nose on the left side.

The right ear began to enlarge in January, or four months before his visit to me. At first, there came a little induration directly in front of the tragus; this broke down and discharged. The ear was ulcerated upward, 4 centimeters from its lower extremity, as seen in Fig. 2; there was also considerable swelling and ulceration on the cheek directly in front of the center of the ear. A piece of the swelling of the cheek was excised for microscopic examination. The microscope showed an ill-formed epidermis with no interpapillary cones, but many embryonic ingrowths destined to form hair follicles or sweat-gland. Near the center of the

epidermal part there was a cavity, projecting from the base of which into the corium is an irregular mass of cells rather lobulated, for the most part showing no basement membrane. Its lowest cells had grown down into the corium, as is characteristic of epithelioma.

December 15 the patient complained of dyspnea and claimed that the pain was much more constant and severe than at the first visit. The ulceration had progressed and had involved the left eyelid to a considerable extent. There was not much wasting and the cancer cachexia was never developed. He died Jan. 4, 1898, just twenty-one years after the first indication of the disease.

While superficial cancer of the skin is usually of exceedingly slow growth, sometimes taking years to attain



any considerable size, the following case constitutes a marked exception to the rule. In June, 1896, an unmarried laborer, aged 40 years, came to the clinic of Prof. Wm. T. Belfield and myself at Policlinic Hospital. He complained of a small growth on the right side of the nose just where the nose-rest of his glasses came in contact with the skin. The tumor was nearly as large as a pea, the walls rose suddenly from the surrounding sound skin. There was very severe pain radiating from it every few minutes, although the growth was not red or inflammatory, neither was it sensitive to pressure. It was superficial and easily movable with the skin, and had the appearance of an innocent wart. The patient was positive that the first appearance of the disease was only two weeks previous to his coming to the hospital. He claimed that the tumor had been growing very rapidly the previous week and that the severity of the pain had been commensurate with the growth. Wishing to observe the case a little more carefully, he was given a mild local application and asked to return again. At his next visit, one week from the first one, the tumor was found to have increased 100 per cent. It was much more painful, but still showing no signs of inflammation.

At the request of Prof. Belfield, I removed the growth and the patient left the hospital one week later. He was free from pain, and union of the wound was perfect. Microscopic examination showed the early stage of the disease well marked. There was projection downward of cells resembling deformed interpapillary processes. The corium showed marked inflammation and numerous tubular, rounded and sebaceous gland-like growths, while infiltration of the free spaces with epithelial cells was distinct. Even below the normal epidermis in the upper reticular part of the corium, there were numerous infiltrating epithelial cells. Three years and ten months after the operation on this rapidly growing epithelioma, I met the patient accidentally, and he was enjoying the best health and the scar was perfectly smooth and healthy looking.

These seeming warts and dry fissures in people past middle life are always suspicious matters, and they are likely to escape detection previous to the moment of ulceration, when the degenerative character is impressed on the physician. If allowed to progress as in the first case, it will invariably proceed to a fatal termination. Had Case No. 1 been operated upon early, as was done with the second, the results would have been just as satisfactory and he would have avoided the awful disfigurement which annoyed him greatly during the last few years of his life.

34 Washington Street.

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## FACTS REGARDING CRIMINAL ABORTION.*

DENSLOW LEWIS, M.D.

Professor of Gynecology in the Chicago Policlinic; President of the Attending Staff of Cook County Hospital.

CHICAGO.

I know a man of marked erudition who wrote a book on the primitive religions. His opening paragraph is as follows: "The facts in this book are true." There is more common sense than rhetoric in this remark. We are all liable to be mistaken in our estimate of conditions. Too many statements are accepted as true simply because frequent unchallenged repetition has made us believe there is no possibility of contradiction. Continued reiteration dulls the sense of perception and discourages investigation. Moreover, social conditions change, laws become obsolete, public opinion varies and our appreciation of justice is often irrational and selfish. For this reason it is important to know the truth. In a consideration of criminal abortion no prophylaxis is consistent without a knowledge of etiology, and discussion is without profit unless the naked facts are presented.

When married women become pregnant, I estimate that 80 per cent. of them wish they were not. There rarely seems to be a convenient season for having babies. If the woman has one child she is apt to think it is too soon to have another. If she has never been pregnant, it is too soon after marriage, it interferes with a trip somewhere or some social engagement, or else she is too delicate, or her husband can not afford it. Some excuse is usually found for dissatisfaction, and in most

* Read at a meeting of the Physicians' Club of Chicago, March 26, 1900

cases some attempt is made to re-establish menstruation.

The older ladies of the community are prolific in advice. Hot drinks, hot douches and hot baths are recommended. Violent exercise is suggested and jumping off a chair or rolling down stairs is a favorite procedure. Certain teas are given, especially an infusion of tansy and pennyroyal. Cathartics are supposed to be useful, and the different emmenagogue pills are too easily procurable. As a last resort ergot may be taken, or, if the woman is ignorant, arsenic, metallic mercury or other mineral poison may be used, often with a fatal result.

It is remarkable that among the most intelligent, refined and religious women of civilized communities a suspicion of wrong-doing is so rarely entertained. I believe this is because the idea prevails that there is no life present until the beat of the fetal heart is perceptible. The history of the earliest nations records the fact that, with the sole exception of the Jews[1], criminal abortion has always been a well-known practice. To-day it is as prevalent as ever, and the only real restraint I know of is the teaching of the Catholic church. It is improbable that any change of sentiment will occur until there develops some systematic effort to teach the truth regarding all matters connected with the reproduction of the species. Judging from my own feeble efforts in this direction,[2] a maudlin sentimentality and a narrow-minded conception of the duties and privileges of the medical profession will too often interpose objections even to the scientific consideration of these important subjects in medical societies and in medical journals. When a man like Howard A. Kelly, of Baltimore, claims that the child should be kept in ignorance of sexual matters; when he says, as he said to me at the Columbus meeting of the American Medical Association, that the discussion of the subject is attended with filth and we besmirch ourselves by discussing it in public, it is high time that our efforts began with an attempt at the education of some of the eminent members of the profession, so that they may know that there is more in gynecology than the passing of a ureteral catheter, more in the practice of medicine than the perfection of operative technique or the collection of fees.

The methods of procuring abortion recommended by the laity are usually futile. The tenacity with which the fecundated ovum clings to its attachment when once it is anchored to the uterine wall is a matter of surprise. Women have fallen from great heights and have sustained injuries sufficient to fracture limbs; they have been beaten to unconsciousness, and, indeed, have suffered even fatal traumatism without severing the connecnection between mother and child. It may be of interest for me to cite a few cases:

A woman, about seven months pregnant, fell down stairs and struck astride the edge of an upright open barrel. She complained of intense pain in the left pubic region on the least motion. Whitaker found an oblique fracture of the body of the left os pubis. There was little displacement, no lesion of the bladder or rectum, and no attempt at miscarriage. A roller bandage was applied around the pelvis, opiates were administered and the urine was drawn with a catheter for three days. In six weeks the patient could walk about the room. Normal labor occurred at term. The fracture reopened and symptoms of peritonitis presented themselves. They yielded kindly to treatment, and the patient recovered.[3]

A woman, 19 years of age, and about six months pregnant, jumped from a second story window, and immediately got up and ran away. Soon she could not walk, and was obliged to remain in bed three weeks, complaining of violent pains over the right hip. For three days after the fall she had a slight bloody flow from the vulva and complained of lumbar pains. Nothing abnormal was found on examination and the patient left the hospital in a few days without further complications.[4]

Lest it be thought that injuries of this kind are usually devoid of danger, it is proper for me to say that my records show many cases of variable traumatism, often fatal, due to falls,[5] lifting,[6] jumping,[7] crushing,[8] kicks,[9] tossing by a cow,[10] and other accidents. In one case a woman, eighty days pregnant with twins, lost one fetus as the result of a fall from a wall 10 feet high, but was safely delivered of the other at term.[11] There are also cases where very slight injury has produced abortion and sometimes the death of the mother as well, and where the simple procedures advised by the old ladies have produced disastrous results.

While walking across her bedroom in the dark a woman ran against the corner of a table, striking her abdomen, though not with any great force. She thought no more of this occurrence, but two weeks later she had an abortion, and an examination of the fetus, which was not quite four months old, showed that it had been struck upon the spine by the blow referred to. Thomas claims that this was unquestionably the cause of its death and the resulting abortion.[12]

The use of vaginal douches of hot water sometimes induces premature uterine contraction and causes abortion. In a case tried some forty-five years ago in England, in which abortion occurred in consequence of the injecting of some unknown liquid into the vagina, an acquittal was ordered by the judge on the ground that the liquid was not proved to be noxious.[13] In the United States such proof is not required. It suffices that the intent be proved, for the crime consists in the attempt and not the result. Indeed, there is still crime, even if the woman be not pregnant.

The use of alum-water injections has caused death. A woman four months pregnant was heard walking in her room and an hour afterward was found lying dead on her face, a saturated solution of alum on one side and a syringe on the other. The autopsy showed the decidua vera and placenta partially detached and small blood-clots behind them. There was no sign of contusion anywhere. It was decided that the alum solution had entered the uterine sinuses and thus by way of the venous circulation reached the heart, where more clots were found, which were deemed to have been the cause of death.[14]

The methods mentioned are usually persisted in until about the third month of pregnancy. By that time the woman is no longer in doubt as to her condition. She can no longer persuade herself that the cessation of menstruation is due to taking cold. She realizes that she is pregnant and that more effective measures are necessary at once, for she has the idea that after another month there are no means of inducing abortion without materially increasing the danger. She attempts more radical measures, or she consults her family physician, a midwife, or some physician recommended as an expert by the ladies of her acquaintance.

I can not refrain from saying in this connection that the induction of abortion is, to my mind, the most reprehensible of medical practices. I wish I could truth-

fully add that none but disreputable men could be persuaded to undertake it. I know from my experience of twenty-two years as a medical man in this city and from the observation of many cases of criminal abortion in private, hospital and medicolegal practice, that the public, and many physicians as well, look upon the induction of abortion as a matter of routine. I have been told by prominent men that they expected their physicians to take care of them. I have lost the patronage of well-known society women because I refused to "help them out," as they expressed it. I have noticed that pregnancy, in some of these women, did not go on to term, and I know who is their physician now.

And yet, if I am honest, there is another aspect to this subject which can not consistently be ignored. I have seen girls of 13 well advanced in pregnancy. I remember a little one whom I saw in a maternity with which I am connected. All unconscious of any wrongdoing, she sat, with the waiting women, contentedly playing with her doll. There is something wrong with our society if such things can exist. It seems to me that one potent remedy is the instruction of children so that they may know the dangers that beset them. There is, to my mind, something lacking in the intelligence of those men who would deny to the child all knowledge of the usual consequences of sexual intercourse. It is manifestly unjust to condemn her when no attempt has ever been made to give her the slightest inkling of the truth.

The manipulations resorted to for the induction of abortion consist of the injections of liquids or the insertion of foreign bodies within the uterus with a view of exciting uterine contraction by their presence, or rupturing the membranes so as to occasion the death of the fetus or of separating fetal from maternal surface. As a matter of interest I may state that I have known women or their attendants to make use, for this purpose, of catheters, slate or lead pencils, knitting or crochet needles, glove-stretchers, hat-pins, nozzles of syringes, picture wire, hair-pins, corset bone, lemonade straws, toothpicks, pieces of chalk, tents of sea-tangle, tupelo, sponge or laminaria, as well as the direct intrauterine injections of glycerin or water, plain or variously medicated.

This is only my individual experience. Cases are recorded of the employment of the greatest variety of objects, sometimes with most serious and fatal results. The history of obstetric medicine from the earliest periods down to the present day reveals the practice of most barbarous methods, and shows most pitiable results only equaled by the traumatisms and fatalities occurring as a consequence of ignorant or unskilful attempts at delivery at term. I will not go into details regarding these practices, which Ploss has described most fully.[15] I saw one case at Biskra, in the Algerian Sahara, where a woman of the tribe of Ouled-Nail aborted following the insertion into the uterus of a sharpened piece of wood resembling a skewer. Dr. H. Smith reports to the London Obstetrical Society an instance of a woman producing abortion on herself thirty-five times by means of a knitting needle.[16]

The injuries that result from the use of these measures are necessarily varied. The average pregnant woman is ignorant of surgical procedures and the difficulty of attempts at abortion on her own person is apparent. Even in competent hands, under justifiable circumstances, the operation has not seldom proved disastrous. When the parts are diseased or structurally weakened, the induction of abortion or of labor has sometimes resulted in perforation or other injury, or has been the starting-point of a fatal infection.

Death has occurred simply from the introduction of a foreign body into the uterus. Vibert tells of a girl four and one-half months pregnant who had a canula inserted into the cervix. When the abortionist was about to inject some water the girl fell to the floor and died in a few minutes. At the autopsy all organs were found to be healthy, including the uterus, which presented only a few "fibroid bodies," not larger than a nut. Death can only be explained by a reflex action, by an "inhibition" of the nervous system provoked by irritation of the cervix.[17]

The intrauterine injection of fluids—preferably of glycerin—has of late years been recommended as a means of inducing abortion. It is said to have the advantage of causing a rapid separation of the membranes from the maternal surface and of speedily exciting uterine contractions. I have had no experience in this method of treatment, but the intrauterine injection is not devoid of danger, as numerous cases of injury clearly show. Death may occur in consequence of the entrance of air into the circulation. Martin, of Berlin, has seen two cases of this character after the use of injections, and additional cases have occurred in this country.[18] Moreover, the instrument used has caused traumatism, in one instance amounting to a perforation of the uterus and resulting in metroperitonitis and death.[19] Mercurial poisoning has also occurred from the use of bichlorid solution.[20]

When foreign bodies are used to produce abortion, especially by the woman herself, the uterus is not always entered. Thomas's case is well known. A physician's wife, thinking herself pregnant, passed an umbrella rib, not into the uterus, but to the right of the cervix, through the vaginal wall, abdominal cavity and diaphragm until it penetrated the right lung to the extent of two or three inches, in which position it was found at the autopsy. The foreign body had remained *in situ* for at least a week and it was observed that an abscess had formed in the lung tissue around the point. Abdominal section had been proposed but rejected.[21]

Javaux tells about an elastic sound which encircled the cervix and was wound around it in a knot. This sound was introduced by a midwife to induce abortion, and the desired result was obtained in two weeks. The sound, however, remained in place for two years and a half, causing abdominal pain, especially during menstruation, until it was removed with forceps.[22]

The injuries resulting from the use of catheters and other foreign bodies introduced within the uterus with criminal intent, and as a rule by the vagina, vary from a laceration to a complete internal perforation. In many instances such an injury heals without serious disturbance of the general health, unless there be infection. In the latter case, septicemia and salpingitis, often with pyosalpinx, are the usual results; but all the well-known effects of an extension of infection are possible. In my own experience I recall a case seen in consultation with the late Dr. Nesbit, of Sycamore, Ill., in which there occurred a metastatic abscess of the brain, first recognized at the autopsy, and another case, which I treated in the Presbyterian Hospital for four months, where fourteen abscesses formed in the patient's legs and arms.

The subsequent history of the foreign body is of interest. Its presence or absence is an element in the prognosis and modifies the treatment very materially. Let us consider the possibilities in detail. First of all,

it may perforate the uterus and pass through into the peritoneal cavity.

I had a unique case of this kind some years ago. A physician was endeavoring to produce abortion in a woman about three months pregnant, by means of a silver male catheter. The patient was nervous and had suffered from melancholia. The point of the catheter was introduced within the uterus, when suddenly the woman made a convulsive movement, and the physician, to his horror, saw the catheter disappear. When I was called to the patient, some hours afterward, I recognized a uterine perforation of the posterior wall through which I could pass a sound some 10 to 15 cm., but I could not feel the catheter within the abdominal cavity. Celiotomy was performed, but nothing was discovered in the pelvis. Finally the intestines were brought out of the abdominal cavity and after some little search I found the catheter under the liver and removed it. The uterine wound was closed with three sero-serous sutures and the right tube and ovary were removed, for it was noticed they were diseased. The patient made an uneventful recovery, and some six months later, after a normal labor, was delivered of a child, which is now 11 years old.

Dr. Gill Wylie reports a case presenting certain points in common with mine. A girl inserted a glass rod into the uterus. It slipped beyond her reach, probably perforating the uterus. The following day the girl went to her work as typewriter. Some five weeks afterward she aborted, and about two weeks after that time a tumor, the size of an egg, was felt in the left ovarian region. Celiotomy showed adhesions about the uterus and left ovary. This ovary and tube was removed, as well as the glass rod which was found near the left kidney. No point of perforation was found. The patient made a good recovery.[23]

Dr. Hektoen has on two occasions, at post-mortem examinations, found perforations of the uterus, made during attempts at criminal abortion; in one instance he found a catheter under the liver.[24]

A case is reported where at the autopsy of a young woman who died when three or four months pregnant, an irregularly-shaped hole was seen in the posterior wall of the uterus, and directly behind it, lying transversely in the pelvic cavity, was found a sea-tangle or laminaria tent about the size of a thumb. Death was due to septic peritonitis, the result of a criminal abortion. It is probable the tent was inserted in the uterus and afterward an attempt was made to remove it. One end of the tent was split and showed marks of forceps teeth or something of the kind and the string was gone. It is probable the operator became frightened and made a desperate effort to get hold of the tent with the forceps and in so doing he forced it through the uterine wall.[25]

In August, 1892, I saw Wertheim perform a Cesarean section in Schauta's clinic at Vienna. The omentum, if I remember correctly, was to some extent adherent to the parietal peritoneum. At all events, it was injected and showed evidence of inflammation, but the most curious circumstance in connection with this case, which, by the way, was operated on in strict accordance with Sanger's directions and resulted successfully for both mother and child, was a large needle about 7 cm. long, which was found imbedded in the omentum. It is hardly possible a needle of this size could have wandered into this curious location. It seems to me probable that it had entered the peritoneal cavity by way of the vagina in an attempt at an interruption of pregnancy.

Then the foreign body may remain in the uterus, causing various sequelæ in consequence of its presence, sometimes without producing abortion. I instance a few cases.

A woman at the Hospital St. Louis, in Paris, was admitted with hectic fever and dull pains in the loins and hypogastrium. A hard, irregular tumor filled the pelvis and extended into the right iliac fossa. A wooden spit 12 cm. long was removed from the uterus, where it had remained since an abortion produced by it two years previously.[26] This woman gradually recovered.

There is a case of an operation for sinus of six months' standing situated over the sacrum. The following day pus escaped from the vagina and a foreign body was felt partly in the vagina and partly in the uterus. It was a bougie over 5 inches long and had been introduced eleven months previously, abortion following in two days.[27]

Sometimes the foreign body which has produced the abortion remains within the uterus for a variable period, without appreciable inconvenience. Bunge speaks of a needle being pushed into the internal os and remaining there twelve days after the abortion.[28]

Occasionally the foreign body, retained within the uterus for a considerable length of time, becomes the starting-point for a suppurative process, through the agency of which it is expelled into the adjoining viscera or penetrates the neighboring tissues. I will speak of two cases of this kind.

A seton needle was introduced into the uterus of a young girl for criminal purposes. A three months' fetus was wounded by the instrument and expelled. Two days afterward the secundines followed but the needle remained *in utero*. About a month afterward an abscess formed in the inguinal region, accompanied by severe pain. On the seventy-fifth day the needle, six inches long, appeared at the surface.[29]

A woman used a branch of a tree to penetrate the uterus. She pushed it in so firmly that it became imbedded in the region of the kidney. The twig, which was six inches long and as thick as a goose quill, remained in the pelvis five months without the patient's knowledge and finally penetrated the rectum.[30]

A case is reported of fatal injury of the internal iliac artery. A woman, six months pregnant, consulted a charlatan, who performed an operation, which at the end of twelve hours was followed by the death of the patient and brought the man into custody. The autopsy showed an enormous quantity of blood, partly coagulated, in the abdominal cavity. The posterior wall of the uterus showed an opening of the diameter of an ordinary sound extending to the right iliac artery, which was itself perforated a little below its origin. Three other punctures had their starting-point in the cervix. In spite of these punctures the fetus had not been reached, the membranes remained intact.[31]

The cases I have cited are exceptional. The usual history is different. There occurs a death, under suspicious circumstances, of a woman suspected to be pregnant. An autopsy is held, resulting in the discovery of lesions due to violence and the presence of sepsis as the determining cause of death. There are many cases of this character recorded in medical literature. Tardieu especially has fully described them.[32]

Evidences of injury are usually found in the wall of the uterus, and consist of lacerations varying in extent from an abrasion to a perforation. The cervix may be bruised and gangrenous inflammation, diphtheric patches or diversified signs of infection may be noticed. Often

the fetus will be found enveloped in its membranes, which may be intact and free from inflammation. The woman in such a case will have died in consequence of an unsuccessful attempt at abortion.

When there is a trial in criminal abortion cases the defense is apt to be an attempt to demonstrate the occurrence of the lesions from external violence, such as a fall or shock, or the assertion that the injuries found are due to disease. Such a defense is, as a rule, easily disproved. A uterus in the early months of pregnancy can not be injured by a contusion severe enough to determine a serious inflammation nor a disorganization of the muscular tissue.

Of course, it is known, as Barnes has pointed out, that the non-pregnant uterus may burst and that rupture may occur at any period of gestation independent of labor. In the former case there is disease of its tissues or there is a closing of the os and an accumulation of fluid in the cavity. During pregnancy, when rupture occurs, independent of trauma, the uterus may have been the subject of Cesarean section or the seat of tubercular degeneration. Cases of spontaneous rupture, or rupture occurring after a long walk, severe vomiting or other apparently trivial cause, are recorded as early as the third month.

In spite of these rarities of obstetric practice, the medical expert will have but little difficulty, as a rule, in determining the probabilities. A microscopic examination of the uterine tissues at the seat of the lesion will be of value, for if no evidence of disease is found the presumption of an external agency will be strengthened. An ordinary abortion does not produce rupture of the uterus nor other extensive or serious lesions. Moreover, the character of the lesion, the appearance of the perforation, if there be such an injury, the color and condition of its borders, the consistency of the neighboring parts—all these will indicate whether the solution of continuity is recent or not, and will assist, in connection with the other pathologic conditions observed, in arriving at a definite conclusion.

I must call attention to two curious cases where women produced abortion on themselves by forcing respectively a hairpin and a knitting-needle into the uterus through the abdominal wall. In the first case a young girl was delivered of a dead infant at term. After she left the hospital it was learned that she had driven a long hairpin through her navel to a great depth with the avowed intention of destroying the child. She had suffered great pain afterward, which she concealed. It was noticed that some pus issued from her umbilicus after delivery, but this discharge gradually ceased and the patient left the hospital in good condition.[33]

Duncan relates the other case. A girl six months pregnant tried to produce an abortion by thrusting a knitting-needle through the vagina into the uterus. Failing in this attempt, she forced the needle through her umbilicus. Two days later abdominal section was performed and the tip of the needle was seen projecting from the fundus uteri. It was seized with forceps and removed, a stitch being inserted in the uterine puncture, as there was some hemorrhage. Two days later the patient miscarried and a black spot was seen on the child's buttocks where apparently the needle had penetrated. The mother recovered.[34]

The facts regarding criminal abortions are not fully stated without reference to the remote effects occasioned by repeated attempts—often successful—at an interruption of pregnancy. A few days ago I met a robust married woman who told me she had had eleven abortions induced by her family physician during the past six years. She appeared to be well, and perhaps she was. Most women live through the ordeal, or our graveyards would be full to overflowing. The etiologic relationship of criminal abortion to new-growths and degenerative changes has not been fully determined. The connection between many diseased states of the nervous system is well recognized, but not very satisfactorily explained. At the same time it is certain that induced abortion is often the cause of some infection with all that the word implies. In addition to the sequelæ of direct and indirect traumatism, already referred to, it is known that there often results some condition which makes pregnancy impossible. The sterility of prostitutes, remarked by Parent-Duchatelet, is estimated by Fritsch at three-fifths of all such women. Among other women who have suffered abortion during the early years of their married life, it is often observed that pregnancy is impossible when the time comes for a child to be most ardently desired. Pitiable, indeed, is the condition of such a woman. Regrets are useless now. There is only remorse and perhaps indignation that the medical men who, in her youth, acceded to her request, had not the manhood to tell her of her folly and to warn her of her danger.

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## Disinfectant for Instruments.

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|---|---|---|---|
| ℞. | Olei olivæ | ℥vi | 24 |
| | Liquoris potassæ | ℥vii | 28 |
| | Alcoholis | ℥xxx | 120 |
| | Aquæ destil. | ℥xvii | 68 |

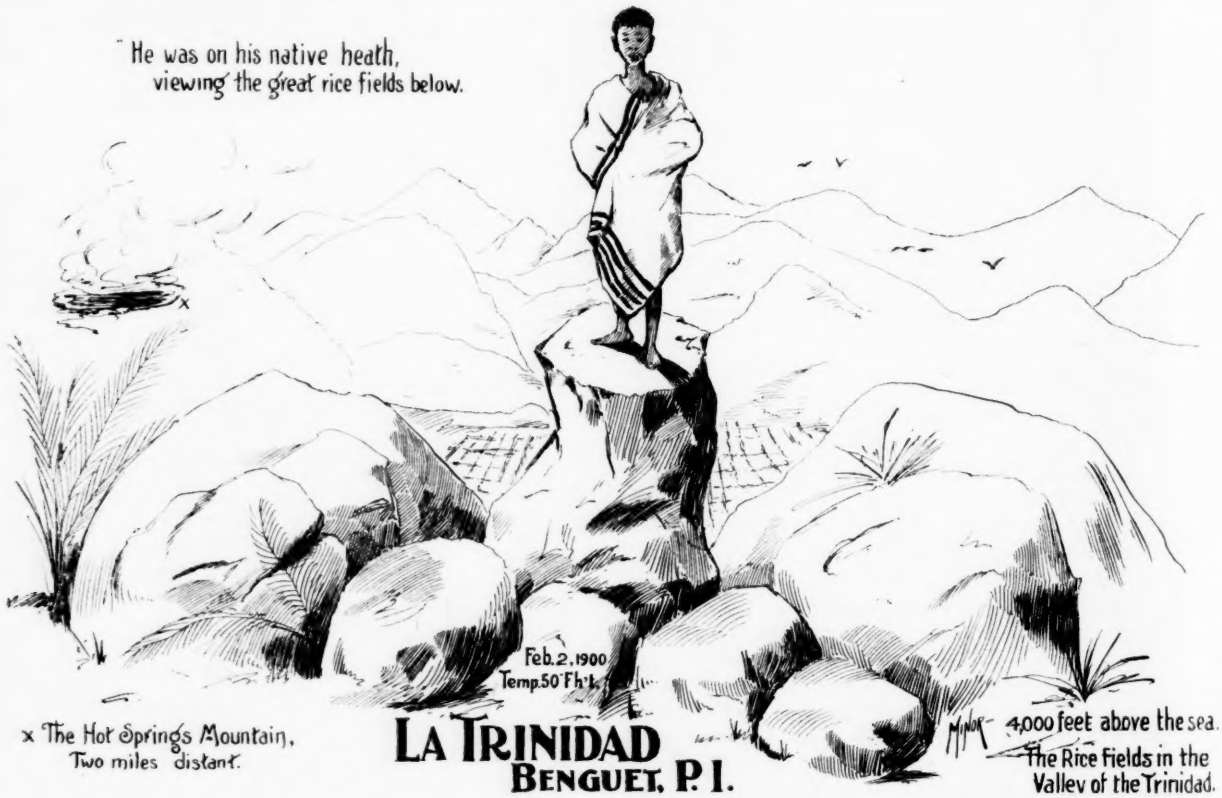
M. Sig. Wash the instruments thoroughly or wrap them in cotton saturated with the disinfectant.

Dr. Karl Gilson, in *Deutsche Med. Ztft.*, gives the above formula for a rapid method of sterilizing instruments, and states that the hands of the operator and skin of the patient may be disinfected with the same agent. The solution has no effect on the instruments. —*Jour. Surg. Tech.*

# THE HEALTH AND WEALTH OF BENGUET PROVINCE, P. I.

CAPT. J. C. MINOR, M.D.
Assistant-Surgeon 29th U. S. Vol. Infantry.
ROMBLON, ROMBLON ISLAND, P. I.

To feel your feet slipping over pine logs in the Philippines and to actually lie down under tall pines and cedars by a rushing, sparkling stream of cold mountain water after a hard day's "hike" through mountains covered with hemp, banana, cocoa-nut, molava, narra and other foreign growths, poetic and useful enough in their place, is to the American soldier like being transported by a miracle from a foreign land to the home of his youth. Such were the nostalgic prodromata noticeable February 1, after marching twenty-four hours over the steepest of most dangerous trails from the China Sea to the mountain side overlooking the little valley of La Trinidad, Province of Benguet. Trinidad is 4000 feet above sea-level, with its protecting circular crest or crown of little mountains enclosing the valley that was once upon a time furiously pouring forth molten lava, but now a most beautiful green plain of some three thousand acres, watered lavishly by the Trinidad river. As we viewed the gorgeous panorama the river appeared to disappear, and so it did, for we learned later that at the northeast corner of the valley the river has tunneled its way through the mountain, to reappear on the east side, water "the great rice fields," and then wend its way westward to the China Sea. The balmy, refreshing air, the homelike odor of pine and cedar, together with the delicious water, present to the doctor but one idea, "What an ideal health resort!"


He was on his native heath,
viewing the great rice fields below.
Feb. 2, 1900
Temp. 50 Fh't.
x The Hot Springs Mountain,
Two miles distant.
LA TRINIDAD
BENGUET, P. I.
4,000 feet above the sea.
The Rice Fields in the
Valley of the Trinidad.

Approximately 4000 feet above the sea in this wonderland of mineral and vegetation, there flows in torrents an inexhaustible supply of hot and cold waters. During three months field-service in the vicinity of Trinidad, I was enabled to learn much concerning the customs of the people, the salubrity of the climate, and the value of these waters. Having resided in Hot Springs, Ark., for the past twelve years, I am naturally interested in the subject of hydrotherapy.

Benguet Province is principally peopled by Igarrotes. There are two classes of the natives: the friendly Igarrote and those who are cannibalistic in their tastes, who do not hesitate to roast, broil or fricassee a white wanderer who may chance to come their way. My therapeutic information, it is needless to say, has been obtained through the other class of Igarrote.

I learned that the springs exhibit a degree of heat from lukewarm to 200 F. There is no variation, however, during the year in the springs themselves, as to either volume or temperature. Nearly all the hot springs contain sulphur, some in small quantity, others in excess. Some of the springs contain calcium hydrate, iron, potash, etc. One which particularly interested me was of water very similar to that of the Arkansas springs, being almost free—apparently—from mineral, but hot and sparkling with carbonic acid gas; it is very palatable, and a favorite with the natives in treatment of rheumatic affections and diseases of the digestive organs.

Few of this hardy athletic race are ever afflicted with disease of any kind, but when one is stricken with rheumatism, diarrhea, or a skin affection, he calls the dogs and starts for the great springs. I say "calls the dogs" pointedly, for the "dog" is the favored food of the Igarrote, and although I have not tasted of their pot of "stewed dog and rice," I am constrained to admit that when one has "hiked" in the mountains for several days successively on a meager ration of bacon and "hard tack" the odor of the native dish appears *"muy savoroso."*

The hot waters of Benguet are famed throughout the Philippine group, and all the prominent Filipinos are aware of their virtues, but the great difficulty at present is to reach them. They are distant from Manila about 250 miles north.

Syphilis is a disease unknown among the Igarrotes. Tuberculosis, heart troubles, rheumatism, and dermal diseases are those met with most frequently, but none of them is common.

It is a noticeable fact that these people are finely built specimens of brawn, erect and athletic, larger than the Filipinos, much larger than the Negrito, and very

When he starts for the market 50 miles distant, with his cavan of rice, one dog is sufficient.

like the original North American Indian. They are peaceful and of a jovial temperament, not lazy, but usually employed either in the construction of ingenious rice dykes for irrigation, in making rattan wares, cotton goods, etc., for coast markets, in washing for gold, silver and copper, in transporting freight in their ingeniously contrived packs, or on their truck farms,

Having disposed of his wares and his dog, he dresses up and wonders at civilization.

growing coffee, chocolate, tobacco, sweet potatoes, Irish potatoes, beans, cabbage, lettuce, onions, etc.

The reported virtue of these people accounts doubtless for the absence of venereal disease among them. The custom of mating their children by agreement at an early age exists among them; they allow the little couple to play together, to work together until they reach the age of puberty, at which time, if all parties agree, a day is set for the marriage feast. The ceremony is unique and somewhat similar to that of the Negritos—the aborigines. The bride is taken off by her father or guardian to a certain distance in the mountains, and at a given signal the groom is turned loose to hunt her up. When he spies her, she gives him the chase of his life—so to speak—and when he catches her, he leads her in triumph to the parents. The parents repeat a ceremony of gibberish, all of which is terminated by bumping together the heads of the happy contracting parties. Then comes the feast and the dance. Little or nothing, apparently is in the way among the Igarrotes to prevent rape, that is, little or nothing of clothing. The male Igarrote is in full-dress when attired in a "G" string and a "bolo." The female milks the cow and attends the ball in no more elaborate a costume than a striped native fabric recklessly thrown around her nether portions, and skillfully fastened at the waist by tucking in the ends, presenting an appearance to the American eye far more picturesque than conventional. And yet no one has ever been able to report or attribute to these people the slightest infraction of the laws of decency or modesty, and, as I say, no case of rape has ever been heard of among them, except as committed by their late rulers, the Spaniards.

Taking all other points in connection with the altitude, the delightful bracing atmosphere—temperature never above 80 F.—the delicious drinking water, the valuable mineral and hot waters, the gorgeous scenery, the abundant products of the soil, the grazing and fine cattle, the unexcelled forestry, rich minerals—gold, silver, copper and coal—and the possibility of American enterprise opening the travel way from Manila, it takes no enthusiast to believe that some day in the near future invalids and prospectors from the world abroad will be seeking the comforting and benign influences of nature's wealth in La Trinidad de Benguet.

[A railroad is already projected into the Benguet region which bids fair to become the hill sanitarium of the Philippines; indeed, there is said to be some talk of removing the civil and military headquarters to that region. If the favorable reports concerning the district are confirmed they will probably attract a very considerable immigration, and be of material aid in developing it in other respects. It is only 161 miles by the projected railway from Manila, or about the distance between New York and Albany.]

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**Board of Health Must Itself Act on Nuisances.**—The State Board of Health of Pennsylvania is given authority, in places where there are no local boards of health, and in cases where boards of health or health officers exist, but the sanitary laws or regulations are not enforced, to order nuisances or the cause of any special disease or mortality to be abated and removed, and to enforce quarantine regulations, as it shall direct. But this, the Supreme Court of Pennsylvania holds, in the case of Commonwealth vs. Yost, does not empower it to transfer to its secretary the authority to act for it and in its stead in such matters. The court holds that, without formal action by the board, directing a nuisance, or the cause of any special disease or mortality, to be abated and removed, its secretary can neither speak nor act for it in ordering the abatement and removal of the nuisance, and the disregard of an order so given is not indictable. In other words, in the absence of any action by the board as to a particular nuisance complained of, the supreme court says that it can not agree with the contention that, because the duties of the secretary are defined by the by-laws and regulations of the board, "he speaks for, acts for and virtually is the board itself" in ordering the abatement and removal of the nuisance, even if he does so in the name of the board.

## CELLULITIS SUCCEEDING CONTUSION OF LEG—EXTENSIVE SLOUGHING—SKIN GRAFTING—RECOVERY.

HENRY W. SAWTELLE, M.D.
SURGEON U. S. MARINE-HOSPITAL SERVICE.
CHICAGO.

This lesion occurred in a seaman, aged 24, native of Denmark, who was admitted to the U. S. Marine-Hospital, Chicago, August 22, 1899.

The patient gave a history of having had chills and fever while serving in the Spanish-American war, and presented a malarial cachexia.

The day before admission he was struck on the inner side of the left leg by a piece of lumber, producing a slight abrasion of the skin. The following night, and again the next day, he had a severe chill, followed by fever—39 C.—and intense headache. On examination, no bad effects were apparent, excepting a slight contusion at the point of injury; a continuous high temperature and accelerated pulse led to the suspicion of pus infection, which subsequently proved to be the case.

The patient soon complained of pain, and the examination showed indications of the infective process. A free incision was made in the midle of the leg, evacuating a large amount of pus; but unfortunately no examination was made with a view to determining the

character of the pus germ, though from the previous history of the patient the plasmodium malariæ undoubtedly was an important etiological factor in the case. Two days later another incision was made near the tendo Achillis and a drainage-tube carried through to the first incision, establishing free drainage, and the limb was immersed in a 1 to 2000 bichlorid solution.

Despite careful antiseptic treatment, the wound during the following eight days underwent extensive sloughing, which required the removal of a large area of skin and subcutaneous tissue.

Several sinuses in the popliteal space and lower portion of the leg were laid open, and as soon as the wound appeared to be in the proper condition, skin grafting was commenced by Thiersch's method. After several attempts the grafts became firmly imbedded, and a month later, almost the entire granulating area was covered, with the exception of a small spot on the lower portion, and another in the popliteal space, which remained unhealed.

These continued to improve gradually however, and on May 30, 1900, the process of repair being complete, the patient was discharged. The accompanying photograph shows the extent of surface grafted.

The lowered condition of the constitution, which required systemic nutrition from the first, and the extent of the destructive process following a slight contusion, are the chief features of interest in the history of the patient.

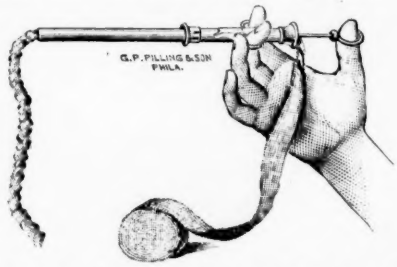
# New Instruments.

### The Darmack Surgical Dressing Packer.

A. GEO. BAKER, M.D.
PHILADELPHIA.

This instrument is used to pack cavities, such as gun-shot wounds, stab wounds, fistulas, sinuses, the uterus, vagina, nares, rectum, etc. It carries the gauze where it is desired and packs tightly or loosely, as is necessary.

The instrument is in the shape of a tube with a piston inside. The front end of this piston or push-rod is bifurcated, pushing the gauze forward, and when the piston is drawn back two small hooks attached to the inside and toward the far end of the tube keep the gauze from coming back. There are




three rings, two on the sides of the tube and one at the near end of the rod, or piston. The thumb is placed into this last, and the fore and middle fingers in the rings on the sides of the tube. There are five sizes, varying from six to twelve inches in length and from five-thirty-seconds to five-sixteenths of an inch in external diameter. The gauze to be used is in long strips, kept in jars or done up in rolls of different widths from one-half inch to six inches wide and from five to twenty yards in length. The packer was made for me by Geo. P. Pilling & Son, Philadelphia.

### Modified Goodell Dilator.

CHARLES F. SPANGLER, M.D.
KANE, PA.

The accompanying illustration is a modification of the Goodell dilator. This is designed chiefly for office work, and can be conveniently manipulated through an ordinary speculum without an assistant or an anesthetic. It is neat in construction, light in weight and embodies sufficient strength. It is evenly balanced and can be poised and directed with accuracy

with the fingers of one hand while the other is engaged with the tenaculum. The blades are smooth, delicately curved, permitting a ready introduction and secure a dilatation of ⅞ of an inch. The body and handles occupy 50 per cent. less space than the original instrument. The degree of dilatation is ample for correcting constrictions of the cervical canal to facilitate medication of the endometrium, or for the use of the ordinary sized curettes; and precludes the danger of unnecessary tearing of the tissues of the cervix, always incident to the use of the larger instruments.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

61 Market Street : : Chicago, Ill.

*Cable Address: "Medic, Chicago"*

*Subscription price: Five dollars per annum in advance*

SATURDAY, OCTOBER 13, 1900.

## THE OCCURRENCE AND IMPORTANCE OF EOSINOPHILE CELLS IN THE BLOOD.

The literature contains many and contradictory statements in regard to the occurrence and the diagnostic value of the eosinophile cells. These cells are easily recognized because of the affinity of their protoplasmic granules for eosin and other acid stains; the staining methods are simple. In order to reach a definite opinion in regard to these cells, the numerous, irreconcilable hypotheses now in vogue must be overthrown so that further investigation may rest on well-established facts. Alfred Wolff[1] has made a beginning in this work, and on account of the increasing importance of hematology in clinical medicine a brief review of his results may be helpful.

Numerous differential leucocytic counts show that in normal blood the percentage of eosinophiles varies from 1.5 to 2.5; 6 to 8 per cent. is surely pathologic. Excluding leukemia, there is a large number of diseases—cutaneous, nervous, respiratory, genito-urinary, and parasitic (trichinosis)—in which an increase of eosinophiles has been claimed. In a very few of these diseases is the increase constant. Wolff details an instance of asthma in which the eosinophiles made up about 10 per cent. of the leucocytes, and this during the intervals between the attacks as well as during the latter. The sputum contained innumerable eosinophiles during the attacks. In another case of asthma the eosinophiles reached the high percentage of 15 to 39 per cent. Wolff found eosinophiles in two cases of hay-fever. This phase of eosinophilia could be studied well in the United States because of the great frequency of the disease here. In trichinosis there is such a marked eosinophilia, first shown by Brown, as to be of diagnostic value. In other forms of helminthiasis the relations of the eosinophiles have not been studied. Gonorrheal pus is often rich in eosinophiles. Wolff found the pus of acute and chronic gonorrhea to contain a varying number of eosinophile cells, the number of which in the blood may be increased at the same time, but this is not constant and without diagnostic significance.

The presence of eosinophile cells in the blood of so many animals, and in about the same proportion as in men, points to their having a distinct function in physiologic as well as pathologic conditions, but the nature of their functions has not been established. The views of the authors on this point vary so greatly that it is hardly worth the while to catalogue the various theories advanced. Except in bronchial asthma, Wolff concludes that eosinophilia has but little significance, which is contrary to the views of Neusser and others. We would mention trichinosis as a second disease in which eosinophilia is of distinct diagnostic value.

As to the origin of these cells, the view generally accepted is Ehrlich's, who traces them to the bone-marrow.

In his extensive "Studies in Leukemia,"[2] Taylor discusses fully the questions of the nature, origin, and evolution of the leucocytes, including the eosinophiles. The theories of hemogenesis are many, and often more or less speculative, so that in reality but few merit serious consideration. According to Taylor's summary, there are in the circulating human blood at least six distinct types of white cells: the large lymphocyte, and its direct descendant, the small lymphocyte, derived from the lymph-glands and nodes; the non-granular, large mononuclear leucocyte, which probably comes from the bone-marrow; the polymorphonuclear neutrophile leucocyte, derived from the myelocyte; the polymorphonuclear eosinophile, also produced in the marrow; and the polymorphonuclear basophile, again of marrow origin. The best evidence at hand indicates that these types are distinct and not interchangeable. The attractive and on the whole simple schematic division of Uskow and others, who teach that all leucocytes pass through the same developmental cycles and may be grouped as young, mature, and old cells, is not sufficient by long odds to explain the morphologic differences of the nuclei, the varying amount and kind of protoplasm and its characteristic granulations, the differences in the motility, and in the behavior under normal and abnormal conditions of the various leucocytes.

1. Ziegler's Beitr., 1900, xxviii, 150-178.

2. Contributions from "the William Pepper Laboratory of Clinical Medicine." 1900. 148-328.

## THE ETIOLOGY AND PREVENTION OF SCURVY.

Although it is generally recognized that scurvy is due to absence from the food of certain substances, the exact nature of these has not been determined, and it must be admitted that empiricism has here advanced beyond science in the prophylaxis. In adults the disorder usually develops when the diet is deficient in fresh vegetables and fruits, while it has been observed in infants nourished with artificial food or with sterilized milk. In either instance the affection readily yields to the employment of appropriate corrective measures, namely, the administration of a properly arranged dietary or of lime-juice, orange-juice, or beef-juice. In view of these facts, Corlette[1] suggests that the defaulting agent is citric acid, which is a normal constituent of fresh milk in the form of the calcium-salt, together with a small amount of potassium and magnesium citrate. Calcium citrate appears in both an amorphous

1. Brit. Med. Jour., Sept. 1, 1900, p. 573.

and a crystalline form, the former being convertible by boiling into the latter. The salt is more soluble in cold than in boiling water, and the amorphous variety is more soluble than the crystalline. There is, further, good reason for believing that the organic acid of milk is present in the form of calcium citrate, almost to the point of saturation. Now, as a result of the boiling practiced in process of sterilization, the amorphous is converted into the crystalline calcium citrate, and this is precipitated as the process is continued. In this way a child nourished with sterilized milk may fail to receive an adequate supply of citric acid, and scurvy will result if it be due to such a deficiency. Scurvy, it has been observed, does not occur so readily, if at all, in children that receive merely Pasteurized milk, and this fact may be due to the circumstance that the milk is not subjected for so long a time to so high a temperature and that it is subsequently cooled.

The practical deduction from the foregoing considerations is that for the prevention of scurvy in infants a sufficient amount of fresh milk should be given. If, for special reasons, this can not be done, properly Pasteurized milk may be employed. If it be inexpedient or impossible to give anything but boiled milk, lime-juice or a citrate should be administered contemporaneously, using one ounce of the former or fifty or sixty grains of the latter as the equivalent of the amount contained in three pints of fresh milk. Besides, any water, used as a diluent, should be added to the milk, not after, but before, boiling, in order to render the solution of citrate less, rather than more concentrated, and thus less likely to be precipitated by boiling, which should not be continued longer than necessary. The milk should be permitted to cool in the vessel in which it has been boiled, and then be well stirred. The possibility is further pointed out that the crystals precipitated by boiling might be held better in suspension by the addition, before boiling, of a substance of gummy consistence, like gelatin, isinglass, dextrin or gum arabic. Also the solvent power of milk with regard to citrates might be increased by the addition, before boiling, of alkaline phosphates in the proportion of ten or fifteen grains to each pint.

In this connection it may not be uninteresting to refer to the observations of Wright[2], who reasons that scurvy is the expression of an acid intoxication, resulting from the use of food-stuffs containing an excess of mineral acids over bases, and the exclusion of those of opposite constituency. The local means of prophylaxis and treatment would, therefore, consist in the administration of salts of oxidizable organic acids, for the purpose of retaining or restoring the normal alkalinity of the blood. Accordingly, in a series of cases of scurvy in which the alkalinity of the blood was found diminished, such drugs as potassium acetate, potassium citrate, sodium acetate, sodium tartrate, sodium lactate, and sodium bicarbonate, were administered, with striking amelioration in the symptoms.

Recently Jackson and Harley[3] espoused the view that scurvy is not due to the absence from the diet of fresh vegetables or lime-juice, but rather to the eating of tainted food; but this explanation is scarcely susceptible of universal application. In opposing this view, Home[4] suggests that the process is an infectious rather than a toxic one, and that the utility of lime-juice and fresh vegetables resides in their antiseptic qualities. It will thus be seen that while we have fortunately been provided with the means of prevention and cure, we are as yet without full knowledge of the factors on which scurvy depends.

2. Lancet, Aug. 25, 1900, p. 565.

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### MIGRAINE WITH RECURRENT OCULOMOTOR PALSY.

The group of diseases comprehended in the designation of neuroses must be conceived to be dependent on changes in nervous structure as yet undemonstrable by present methods of investigation. There is a growing belief that aberration in function can not take place without alteration in structure—in fact, normal function must be referred to molecular changes in the cellular elements. In either instance the result is attributable to the reaction of sensitive structures to stimuli of varying degree and character. The problems opened by these and allied conceptions are almost illimitable, and we must look for their solution to the new physiological chemistry. One of the most interesting of the neuroses is migraine, which is by some considered the sensory analogue of epilepsy. Both diseases are paroxysmal or explosive, are as a rule unassociated with a gross lesion, may be preceded by an aura, be attended with hallucinations or perversions of the sensorium, or be followed by motor impairment, and are sometimes convertible the one into the other.

A number of years ago Moebius described as periodic oculomotor paralysis, a disorder attended with loss of power in the muscles supplied by the third nerve of one side, recurring at somewhat regular intervals, and subsiding spontaneously in the course of days, weeks or months. The palsy was almost always associated with headache on the affected side, as well as nausea and vomiting. Occasionally sensibility was impaired in the distribution of the ophthalmic division of the fifth nerve on the corresponding side. In some cases the paralysis was purely periodic; in others it was persistent, though with periodic exacerbations. The pathology of the affection is obscure. In some instances organic disease has been found involving the third nerve at the base of the brain; in others it must be attributed to vasomotor influences, sometimes spastic, sometimes paretic; while in still others it may be dependent upon degenerative lesions in the medulla oblongata. The disorder is progressive in course, although it may in individual instances be checked or undergo complete

3. Ibid., April 28, 1900, p. 1184.
4. Ibid., Aug. 4, 1900, p. 321.

involution. No successful treatment is known. The disease has been designated ophthalmoplegic migraine by Charcot, but Moebius contends that it is not a true, but merely a symptomatic, migraine, probably dependent on irritation of the descending root of the fifth nerve by a hypothetic lesion in the neighborhood of the oculomotor nucleus. A case in which true migraine and recurrent oculomotor paralysis were associated has been reported by Seiffer[1] from the clinic of Prof. Jolly, of Berlin. The patient was a man, 49 years old, who presented himself on account of severe headache. His mother had been insane and his father addicted to the moderate use of alcohol. One of his children was dead of spasms and three suffered from periodically recurring headache. The patient denied a history of syphilis and of alcoholism. From the age of 8 he was at intervals of four or five weeks seized with left temporal headache lasting for two or three days, and preceded on the day before by a feeling of torpor and increased appetite. The attack was attended, besides, with anorexia, constipation, nausea, vertigo, chilliness, lachrymation, muscæ, and increased irritability. Some ten years before coming under observation ptosis of the left upper eyelid was noticed during the attack, disappearing subsequently, but increasing progressively. Two years later diplopia became an associated phenomenon. Both conditions now grew more prominent and persistent and the eyeball became deflected outward. When examined, the patient exhibited complete paralysis of all of the external and internal ocular muscles supplied by the third nerve on the left side, the pupils being dilated, insensitive to light, and immobile in accommodation, and the globe fixed in permanent divergence. The eye-grounds were normal and there was no other evidence of disease of the nervous system or of other viscera.

1. Berliner klinische Wochenschrift, July 23, 1900, p. 657.

## PAIN IN THE LOWER ANIMALS.

The question of pain sensations in the lower animals is manifestly difficult to study. There are those who assume that movements or reactions to external stimuli in the lower animals are the outcome of psychical processes thereby induced. They at once assume the existence of the thing to be proved, namely, the existence of psychical processes in the organisms studied. According to this view, such forms as larval crustaceans, flies, the earthworm, the moth, etc., regulate their movements by consciousness. The moth, for instance, flies into the flame because of its curiosity to see more of the strange object.

Others seek to analyze the reactions of animals on mechanical grounds. Loeb shows that the orientation of lower animals with respect to light corresponds to the same phenomena in plants toward the same source of stimulus. Hence, plants must either be "conscious" or orientation of animals is explainable on mechanical grounds as in the case of plants.

Many of the reactions in lower animals against injuries, painful in man, easily suggest that the animals actually are in pain. Touching an earthworm with a needle throws it into violent squirming, but does that squirming mean pain? When an isolated frog's muscle is placed in a strong salt solution, rapid contractions follow; surely these are not due to pain sensations. Norman's[1] experiments with the earthworm show that after cutting it in two the anterior part crawls away, while the posterior part begins to squirm. But the same thing happens on halving of the two first pieces and the pieces resulting from further halving—the anterior half crawls away, the posterior squirms. If these reactions indicate pain, then pain sensation must be attributed to pieces of the animal. The fact that the front half of any piece behaves differently from the posterior half, shows that the form of reaction in any part of an earthworm is different on the direction of the impulse. Forward impulses initiate orderly movements; backward impulses squirming motions. Norman shows further that these reactions are not peculiar to this form of injury, but result also from other local stimuli, and further that in such animals as the starfish, the leech, the crab and the honey-bee, there are no reactions observed after injury, a fact that certainly would go against the theory of pain-sensation, although perhaps not directly proving the absence of pain.

1 Do the Reactions of Lower Animals Due to Injury Indicate Pain Sensations? Biological Lectures from the Marine Biological Laboratory, Woods Holl, Mass., 1898, 235-244.

## AN UNFORTUNATE DECISION.

The Appellate Court of Chicago has just given out a decision that the State Board of Health has no authority to revoke the certificate of a physician received before July 1, 1899, when the present law went into effect. We do not believe that it was the intention of the law-makers that this interpretation of the law should rule, but strict technical constructions often defeat their purpose in other matters as well as in this. It certainly emasculates the existing law in a very important respect, and if this decision can be taken as definitely settling the matter, the sooner it is amended by additional legislation the better, if indeed that is possible. If, however, there is a chance of a broader view in a higher court let it be taken up at the earliest practicable moment. It is a favorite dogma with lawyers that the law is the perfection of human wisdom, but from a medical and common-sense point of view we too often see judicial decisions make it the reverse.

## RESTRICTION OF VICE AMONG SOLDIERS.

A contemporary in speaking of certain sanitary measures adopted in Manila, more particularly the regulation of vice, editorially deprecates what it calls the "attempted Puritan interference," and says "soldiers should be allowed all the liberty that is compatible with the performance of their duties, and they should be shielded as thoroughly as possible from the consequences of immorality." This does not sound well, to say the least; whatever grounds of expediency may

justify such regulations, it is poor policy and worse ethics to excuse them on the ground that we should not restrict the liberties of the soldier in his tendencies to immorality, which certainly are not less than those of other men, and need in some regards even more restriction. If such regulations are employed it is better to consider them as necessitated by existing evils than as justifiable on the ground of normal personal rights. If such regulations have the results of lowering the moral standard, they do harm, for conduct in such matters will never surpass the ideal.

## DISORDERS OF FAMILIAL ORIGIN.

Congenital diseases may, without being hereditary, have a familiar distribution, occurring in several members of the same generation or in collateral branches. This may be presumed to be due to some latent defect in the progenitors or to some common error in development. Diseases of the nervous system especially occur in familial distribution, as for instance, the psychoses in general, as well as the neuroses, and diseases of the brain, the medulla and the spinal cord. It has been observed that nervous diseases which may be transmitted by heredity often appear in descendants of individuals subjected to chronic intoxication. The organs of special sense and the internal viscera may be affected in a similar manner. The lesions may even be teratologic in character. Thus, twins not rarely exhibit similar deformities. An instance of familial disease of unusual character has recently been reported by Féré:[1] two neurotic women, cousins, 34 and 38 years old, respectively, presented symmetric lipomata in each plantar arch, in the one associated with tarsalgia, and in the other with herpes zoster. Inquiry failed to disclose any hereditary history of a similar lesion.

## DEGREE-CONFERRING COLLEGES IN ILLINOIS.

Two years ago an attempt was made to pass a law through the legislature of Illinois limiting the degree-giving power to educational institutions possessed of a certain minimum endowment. More or less similar laws are in force in some other states and the result has been good. When the measure was before the Illinois legislature, however, there was an outcry from the secular press, that it was illiberal, aristocratic, and un-American, and it naturally failed to pass. Since then, however, the country has had an object-lesson of the need of just such a law, a need which is the greater in Illinois, since in that state charters are granted on application and any fraud can incorporate without scrutiny into its character. The exposure of the Armstrong frauds, of which there appears to be an unlimited succession, has taught the public something since 1898, and it may be that a similar measure introduced in the coming session would have better success. Such a law could not hurt existing small colleges, for no state can pass *ex-post-facto* laws, but it would prevent the outrageous frauds that are possible and legal at the present time and which have discredited Illinois degrees throughout the world. The really fraudulent incorporation can be suppressed by law, but it is useless to attempt it when a new one can immediately rise to take its place. With such an act in force, however, even the Armstrong hydra can be exterminated. It would be well if the medical profession in Illinois, and in this they would be backed by every one who possesses a respectable Illinois degree, could begin now to exert their influence for the enaction of a law similar to the Rogers act proposed two years ago. The question is out of politics and can be only actively opposed by rank demagoguery and quackery; the state has had an object-lesson of its needs, and the prospects are therefore better for its success.

1. Revue de Chirurgie, 1900, No. 8, p. 186.

## MEDICAL DEFENSE IN DETROIT.

The proposed organization of physicians in Detroit, already editorially noticed in THE JOURNAL, has been perfected, we understand, without the more objectionable features heretofore referred to—the boycott and other trade-union practices. With these eliminated, there is no reason why such an organization should not be a success and of the greatest service to the profession. What medical men, in any locality, need is organization on high professional and ethical lines. This will prevent them from being exploited for the personal advantage of deadbeats in general, or of organized benefit-clubs or fraternal societies. The general public will agree with the *Detroit Free Press* when it says, "every doctor is entitled to remuneration for his services" and that he has "the further right to protect himself and the community against fraud in whatever form it may present itself." Yet, a very large portion of every extensive community has practically acted as if such rights did not exist. Matters may have been worse in this respect in Detroit than in some other localities; we do not know as to this, but they are bad enough everywhere. It may be a difficult task to educate the public out of the idea that physicians are, in a sense, public slaves and that any association for their rights is a trust, but business methods and organization will do it if anything can. There are possibly still some features of the Detroit scheme that may not be perfectly acceptable to all, but we certainly have strong hopes of good to follow its adoption and time will tell what is best to retain and what to reject. There is still another aspect than the purely business one, and one to which THE JOURNAL has often referred in the past, viz., the influence of a better medical organization in the management of public affairs as far as they touch upon the best interests of the profession. There are no men whose influence ought to go further than that of physicians whenever it is exercised for their rights, and yet it has hardly been felt heretofore in public legislation. With proper organization this will be changed, and both individually and collectively the members of the profesion will be better able to make themselves felt when matters in which their special knowledge comes into play are before the public or legislative bodies.

## ADENOMA MALIGNUM.

Gynecologic literature especially contains numerous references to malignant adenoma. This might lead to the supposition that the tumor was especially common in the uterus. This is, however, far from being

the case, as there is probably no glandular organ, except the kidney, in which this tumor has not been found. In the lower part of the large intestine it is quite frequent; and it occurs in the biliary ducts, the gall-bladder and the liver, as well as elsewhere. The reason that it has received so much attention from the side of gynecology is probably the difficulty of its differential diagnosis from benign tumors and hyperplasias. Pathologists are agreed that by malignant adenoma is understood a tumor of glandular structure that extends into the adjacent tissues and gives rise to metastases, also often of glandular type. As pointed out by Hansemann,[1] its clinical course is that of carcinoma. Recidivations occur, ulceration takes place, its growth is unlimited, and it induces an increasing cachexia. Occasionally it happens that the metastases and recidivations present a more or less well-marked transition in their structure to cylindric and other forms of carcinoma. Hansemann describes a clear instance illustrating this course of events. It must be accepted as settled that the malignant adenoma at any time may pass into undoubted carcinoma—malignant adenoma differs from carcinoma not in kind but in degree. There is, consequently, no real reason for establishing malignant adenoma as a distinct type of tumor, as advocated recently by Selberg. Hansemann favors retaining the terms malignant or destructive adenoma, because they signify a tumor in which the glandular character is pronounced and because they carry with them the idea of smaller degrees of malignity than the term carcinoma. He, himself, however, acknowledges that there are malignant adenomas that give rise to early metastases of a typical carcinomatous structure, at the same time as there are typical carcinomas of slow growth, late metastases, and absence of return after removal. It would seem that under these circumstances a distinction was being made without any real difference. In the interests of simplicity of classification and of clearness of statement in teaching, it is indicated that a tumor which is a subordinate variety of carcinoma, structurally and clinically, be called carcinoma—adenocarcinoma. After all, there is no term that better expresses our conceptions, clinical, therapeutic and prognostic, in regard to a malignant epithelial or glandular tumor than carcinoma. Hence, carcinoma should be used in order to avoid all possible risk of misunderstanding. This is done by Cullen, in his recent work on "Cancer of the Uterus."

1 Virchow's Archiv, 1900, 161, 458–461.

## A PROBLEM IN ELIMINATION.

Certain people are afflicted with what we, according to individual fancy, term lithemia, latent gout, uric-acid diathesis, uricacidemia, etc. These unfortunates complain of a number of vague symptoms, frequently of a neurasthenic character, such as muscular pains and neuralgias, disturbed sleep, susceptibility to colds and to catarrhs of the mucous membranes, headaches, and other similar symptoms. These people feel best in hot weather when perspiring freely, which naturally suggests the probability that the consequent increased elimination of waste products through the skin removes from the blood some toxic substance that is the cause of the trouble. Especially is this corroborated by the frequent observation that such people feel much worse when a cool day suddenly follows several hot ones. While *a priori* arguments are usually worse than useless, at least when applied to natural phenomena, some speculation is justified in the case of a diseased condition whose source in the intricate metabolism of the body is beyond our present reach. If increased elimination alone accounted for the amelioration of the lithemic symptoms in hot weather, it would be natural to expect that the compensatory increase in the quantity of urine on the occurrence of a cool day would automatically remove the deleterious products. Therefore we may tentatively conclude that, at least in these lithemic cases, there are certain waste products in the circulation which are readily removed by the activity of the sweat-glands, and which are not so readily eliminated even by increased activity of the kidneys. However, we must not forget the possibility that in hot days the body may find it easier to completely oxidize, rather than to eliminate, certain substances that may cause the mischief. Be that as it may, we know that the renal excreting cells possess normally a marked selective action, enabling them to remove from the blood-stream certain substances, while they compel the retention of others. Thus, for instance, all the sodium chlorid above a certain fixed ratio is promptly eliminated through the urine, while serum-albumin, which constantly passes through the cells, is not permitted to escape so long as the cells retain their full physiologic integrity. From these facts may we not suggest the possibility that in the subjects of lithemia and allied conditions there are formed certain substances that are moderate nerve and muscle poisons, for which the renal excreting cells have no selective action? May not this explain why in certain of these cases Turkish baths are vastly more efficient than diuretics? Of course this involves the assumption that the sweat-glands are more efficient in the elimination of these particular substances than are the kidneys. The practical deduction from this theorizing is that we should endeavor to aid these cases by exciting the excretive activity of the skin rather than by wasting efforts in administering diuretics. Hot baths and general massage should therefore be tried early, with the reasonable hope of relieving the autointoxication, which there is good reason to believe is the underlying cause of the unpleasant symptoms.

## THE OPERATIVE TREATMENT OF PULMONARY TUBERCULOSIS.

Although we possess no therapeutic agent capable of exerting a specific curative effect on the tuberculous process, wherever situated—perhaps excepting tuberculin, and its influence for good can not always be depended on—there is not wanting evidence that recovery takes place, at least clinically, in a large proportion of cases. Such a result is brought about mainly through improvement in the general nutritive state, principally by means of diet, air and other auxiliaries. Inhalations of compressed air and expiration into rarefied air have also been employed for their directly beneficial influence on the lungs. A few years ago a proposition was made looking to the treatment of pulmonary tuberculosis by

means of an artificial pneumothorax with nitrogen gas, for the purpose of placing the affected tissues at rest. Following analogy, Palmer[1] recommends in the early treatment of tuberculosis of the lungs the same remedial measure that is employed in the treatment of the disease when situated in any other accessible organ, and which alone, he contends, offers a really good prospect of success, namely, surgical extirpation. In the absence of personal experience, he is compelled to base his argument on anatomic considerations, on accidents affecting the lung tissue, and on cases in which operation on the lungs has been necessary for other and graver lesions. The most important danger in connection with operations involving the lungs and pleura consists in collapse of the lung; but pleural adhesions are often present, and these will suffice to prevent collapse. Pneumothorax, however, is by no means necessarily fatal. Further, it may be averted by the formation of inflammatory adhesions, spontaneous or induced artificially; or the layers of pleura may be united by sutures; or the lungs may be kept distended by artificial inflation. A second danger to be considered is surgical emphysema, but this would not be likely to occur, as the wound-opening would be sufficiently large to permit of free movement of the air. A third danger is hemorrhage; but the superficial vessels of the lungs are not large. To avoid this complication, the affected tissues, if the lesion be circumscribed, might first be included in a ligature and then excised, or an electric écraseur might be employed. Under other conditions ligatures could be applied to the larger vessels, including the bronchial tube and its accompanying artery and vein; or the incision with the knife could be followed by the application of the electric cautery. While, theoretically, surgical treatment of pulmonary tuberculosis would seem to be an ideal method, it is not likely ever to become popular or general, as, apart from the risks and dangers of operations on the lung, it is difficult to recognize the disease when it is so circumscribed and limited as to be amenable to this form of treatment; and, besides, it will be almost impossible to exclude the presence of the disease in other portions of the same lung, in the other lung, or in other portions of the body. For certain complications of pulmonary tuberculosis, however, such as abscess or gangrene, surgery no doubt has a wider field of application.

1 The Lancet, June 23, 1900, p. 1792.

# Medical News.

## CALIFORNIA.

THE REDDING HOSPITAL building will be completed and ready for patients in a few days.

SCARLET FEVER has appeared in Santa Clara. Five cases have been reported and quarantined.

A DETACHMENT of sixteen men of the army left San Francisco, on the transport *Hancock*, October 1, to disinter and transport to this country the bodies of the men of the army and navy who have died in the Orient during the last two years.

THE GRAND JURY has been requested by President J. M. Williamson, of the San Francisco Board of Health to investigate the charges recently made that employees of the Health Department had systematically levied blackmail on the inhabitants of Chinatown on pain of persistent inspection.

SEGREGATION of tuberculous patients in a new pavilion containing eighty beds, to be erected in the north end of the present City and County Hospital site, San Francisco, was recommended by Dr. Gustave E. Sussdorf, but could not be acted on because of the lack of the amount, $7000, necessary for its construction.

## COLORADO.

DR. HERBERT A. BLACK, formerly of Augusta, Me., but now in practice in Pueblo, was married to Miss Bertha S. Lawrence, at Augusta, September 26.

THE PULLMAN COMPANY threatens not to build the contemplated shops at Denver, which will employ about 400 men, if the city council persists in passing an ordinance requiring the fumigation of all sleeping-cars upon their arrival at and departure from Denver.

AN ALLIANCE, to aid the health department of Denver, is being engineered by Dr. Frank Dulin, assistant health commissioner. It is proposed to include in this combination all physicians in the city, and they will be expected to work together for the common good.

## DISTRICT OF COLUMBIA.

DR. LINCOLN JOHNSON, Washington, has gone to the United States of Colombia, to engage in the practice of medicine.

A COMPETITIVE EXAMINATION was held September 24, at the Emergency Hospital, as a result of which Dr. W. R. Moulden becomes resident physician; Dr. Clifford Sperow, Martinsburg, W. Va., senior assistant, and Dr. Robert B. Beale, junior assistant.

THE HEALTH OFFICER of the District, Dr. William C. Woodward, recommends in his report, the construction of a new isolation hospital, an increase in salaries of certain officials of the department, and the control of the milk-supply of the District by proper ordinance.

## FLORIDA.

DR. ISAAC CASTELLANOS has moved with his family to Kissimmee from Havana, Cuba.

DR. WADE H. JONES, city physician of Tampa, is reported to be ill and in a serious condition.

DR. URBAN S. BIRD, Tampa, was married to Miss Laura McClellan, Warsaw, Ind., September 20.

ST. ANTHONY'S HOSPITAL has been incorporated at Pensacola by Dr. Warren E. Anderson and others, with a capital stock of $25,000.

THE EMERGENCY HOSPITAL, Jacksonville, which is too small and unequipped for its needs, is soon to be moved into the building, in Brooklyn, formerly occupied by the Frankie Schumaker Hospital.

JACKSONVILLE has passed an ordinance prohibiting spitting or throwing "hulls, peelings or other litter" on sidewalks, or floors of public places on pain of the imposition of a fine of not less than $1 nor more than $5.

## ILLINOIS.

DR. VICTOR M. DALY, Pontiac, returned from his trip to Europe, October 1.

DR. J. FRANK WILSON and Miss Della Vandeventer, both of Versailles, were married September 30.

ROCKFORD HOSPITAL has received a bequest of $1000 from the estate of the late Elizabeth Hulse Moffatt.

THE MOLINE HOSPITAL, during the fiscal year ended June 1, admitted 135 medical, including 69 of typhoid fever, and 113 surgical cases.

SPRINGFIELD HOSPITAL reports that during its first year 122 patients were admitted, in the second year, 201, and in the third year, 341. In all, 65 have died. The hospital has a capacity of 50 beds.

DR. WILLIAM A. STOKER, superintendent of the Illinois Southern Hospital for the Insane at Anna, has resigned, and will become superintendent of the Southern Indiana Hospital for the Insane at Evansville.

THE COTTAGE HOSPITAL, Peoria, which was, if not the pioneer, one of the first hospitals of its kind in the state, is to have a new main building which will be built and equipped in accordance with modern ideas. The capacity of the group of buildings composing the hospital will be about 150 beds.

### Chicago.

THE CHICAGO EYE, EAR, NOSE AND THROAT COLLEGE has increased its capital stock from $10,000 to $25,000, and its directors from three to five.

THE MEDICAL DEPARTMENT of the University of Illinois, College of Physicians and Surgeons, held its opening exercises October 1. Prof. Robert H. Babcock delivered the opening address.

THE WOMAN'S MEDICAL SCHOOL of the Northwestern University opened for its thirty-first annual session, October 1. Addresses were made by Profs. William E. Schroeder and Leonard L. Skelton.

DR. REINARD HERMAN, who had recently come from Germany and settled in Milwaukee, disheartened because of deferred success in practice, committed suicide in this city, October 3, by taking hydrocyanic acid.

RUSH MEDICAL COLLEGE held its opening exercises in University Hall, Fine Arts Building, October 5. Prof. Llewellys F. Barker, delivered the opening address on "The Study of Anatomy." Eleven graduates received degrees.

#### HEALTH DEPARTMENT.

Only 398 deaths from all causes were reported to the Bureau of Vital Statistics last week as against 458 during the previous week and 455 during the corresponding week of 1899. The annual death-rate, based on this total, is 12.2 per thousand of the United States Census figures of population—the lowest October mortality-rate on record. The increase of diphtheria, scarlet fever and other contagious diseases of childhood which as a rule, follows the resumption of school attendance, is much less marked this year than usual. The Health Department attributes this chiefly to the system of medical inspection of the schools maintained by the Board of Education. Deaths from acute intestinal diseases were 54, consumption 39, pneumonia 30, heart diseases 29, nervous diseases 23, Bright's disease 21, violence—other than suicide—18, suicide 13, diphtheria 15, cancer 17, bronchitis 10, convulsions 13, apoplexy 10, typhoid fever 7, and scarlet fever 3. Births reported were 544.

## INDIANA.

DR. CHARLES H. WAXHAM, North Liberty, has given up his practice there and has gone to Denver, Col.

SEVEN CASES of smallpox are reported in Liberty Township, Fulton County, by county physician Charles E. Gould, Rochester.

THE DOCTORS of Lafayette are sensitive about riding in a patrol wagon and have petitioned the city council to procure a real ambulance.

THE WEDDING of Dr. David F. Trenary, resident physician at the Asylum for the Incurable Insane at Julietta, and Miss Esther Wilcox, Indianapolis, which occurred July 11, has just been announced.

DR. D. J. SWARTS, wife and son, also physicians, of Auburn, have just returned from a lengthy sojourn among the leading medical centers of Great Britain and continent. Dr. D. J. Swarts is 70 years of age, and "still hale and hearty."

A HOSPITAL FOR CONSUMPTIVES is a crying need of Indianapolis, and Mrs. Lewis Wallace, Jr., read a paper on "The Care of Consumptives" before the Flower Mission, which has the project in charge, pleading for the speedy attainment of its desire.

THE STATE BOARD OF HEALTH has prepared an address to the people of the state, warning them against smallpox, which it fears will be epidemic this winter, and containing illustrations of smallpox patients, and instructions as to vaccination, disinfection and lay recognition of the disease.

## KANSAS.

DR. JOSIAH P. LEWIS and daughter, Topeka, received painful injuries in a runaway accident.

DR. WILLIAM H. RIGHTER, Topeka, was charged, October 2, with having failed to report a case of smallpox.

THE FIRST smallpox case since the present crusade in Topeka commenced was sent to the isolation hospital, October 3.

PLANS are now in the hands of local contractors for the erection of a large private hospital in Ellsworth to be owned and operated by Drs. Hissem and O'Donnell.

THE NEW HOSPITAL which is to be erected in Pittsburg, at a cost of $25,000 will be under the direction of the Sisters of St. Joseph. Mr. C. J. Devlin, of Topeka, has donated the land and will defray the expense of the construction of the building.

A SMALLPOX EPIDEMIC is to be averted in Topeka if the local board of health has its way. It has prepared an ordinance providing for compulsory vaccination and a penalty for disobedience of the order. The city physician has also sent out a circular calling attention to the ordinance regarding reports of contagious diseases and quarantine therefor.

## KENTUCKY.

DR. JOHN P. GILMER, Louisville, was married, October 10, to Miss Margaret Goodloe, of the same city.

DR. J. I. GREENWELL, a graduate of the Hospital School of Medicine, Louisville, has located in New Haven.

THE REORGANIZATION of Speers Hospital, Dayton, is well under way. Among the new trustees are Drs. Charles B. Schoolfield and W. Dallas Richards, of Dayton. The number of trustees has been increased to five, and men have been selected who will work in harmony with the medical staff.

## LOUISIANA.

THE LOCAL board of health at Shreveport has been organized by Dr. James C. Egan, health officer, with Dr. Henry C. Coty as chairman.

THE REPROACH against New Orleans in point of health is being taken away. For the eleven weeks ended September 15 the average death-rate was only 16.08 per annum per thousand for the white population.

THE FRUIT COMPANIES of New Orleans have protested against the delay entailed by the State Board of Health, which requires that all ships on leaving Port Limon and Bocas del Toro be inspected and disinfected, and detained and again inspected before being allowed to come up to the city. The board very properly refused to consider the matter or modify its rules.

## MAINE.

THE SCHOOL BOARD of Rockland has been asked by the local board of health to refuse to accept the vaccination certificates of the Boston physician who issued 157 without, it is alleged, having made personal examination of the children. The school board very properly replied that it was not within its province to question the validity of certificates signed by a regular practitioner and suggested that the board of health assume the responsibility.

THE PORTLAND Board of Health's report shows that for the year ended Feb. 28, 1900, there were 887 deaths in the city. Zymotic diseases caused 11.85 per cent. of the deaths; constitutional diseases, 24.24 per cent.; local diseases, 50.51 per cent.; developmental diseases, 8.45 per cent., and violence, 4.74 per cent. Of contagious diseases, 191 cases of scarlet fever, 130 of diphtheria and 83 of typhoid fever were reported. The board urged upon the city government the necessity of municipal milk inspection, and of a new isolation hospital.

## MARYLAND.

### Baltimore.

DR. G. MILTON LINTHICUM has returned from Europe.

DR. GORDON WILSON has been appointed fellow in pathology in the Johns Hopkins University.

DR. CHARLES E. SIMON has returned from Nova Scotia, where he has a summer sanatorium.

DR. H. B. JACOBS, the American secretary of the International Medical Congress, has returned from Paris.

PROF. CLARIBEL CONE delivered the opening address at the Woman's Medical College on "Woman and Her Work."

MRS. FLORENCE LEVY EVERSMAN has given an additional $500 to the Hebrew Hospital, as a memorial to her parents.

DR. JOHN ARTHUR LUETSCHER, late interne at the Johns Hopkins Hospital, has been appointed a resident physician at the Boston City Hospital.

AT THE WOMAN'S MEDICAL COLLEGE Dr. Melker Elkstromer has been elected professor of chemistry; Dr. Henry Lee Smith, associate professor of diseases of children, and Dr. Louise Erich, adjunct professor of hygiene.

HEALTH COMMISSIONER BOSLEY is determined to enforce the law prohibiting the exposure of corpses of those who died from infectious and contagious diseases, and restricting the attendance at their funerals. He regards this as a most prolific source of the spread of such diseases.

FOR THE week ending October 6 the deaths were 192, births, 304. Of the latter 158 were males and 146 females. There were 30 deaths from tuberculosis, 18 from cholera infantum, 4 from typhoid fever, 9 from diphtheria and croup, 6 each from cancer and pneumonia, 12 from Bright's disease. New cases of infectious diseases were reported as follows: Diphtheria, 51; scarlet fever, 8; typhoid fever, 38; whooping cough, 1.

THE HEALTH COMMISSIONER has issued a circular asking the co-operation of physicians in fighting diphtheria and scarlatina this fall. He urges physicians to insist that all children in families where there is diphtheria be immunized by antitoxin, when they can not be isolated. The department offers to supply the antitoxin to those too poor to purchase it. He considers that a scarlet-fever patient should be kept isolated for at least three weeks after the temperature has returned to normal. In case of diphtheria the room will be disinfected by the officials of the department, after the throats of all members of the family have been proved to be free from germs. In scarlatina, the premises will be disinfected after all desquamation has ceased, the three-weeks' limit being observed as far as possible.

## MASSACHUSETTS.

THE CULLIS Consumptive's Home, Boston, celebrated its thirty-sixth anniversary on September 27.

MORE THAN $1200 has been raised for the Springfield Hospital by the efforts of the City Hospital Aid Association.

LICENSES to practice were given to 26 out of the 33 candidates who took the examination of the State Board of Registration in Medicine at Boston on September 11 and 12.

LYNN HOSPITAL reports receipts for the past year of $21,175 and a balance of $4036.47, which has been added to the hospital fund. The average cost of maintenance of patients was $7.69 per week.

DR. ARCHIBALD J. RANNEY, who has been connected with the State Hospital at Tewkesbury for seven years, has been appointed superintendent of the Boston Almshouse and Hospital, on Long Island.

HARVARD MEDICAL SCHOOL is to have a new home. About 27 acres of land has been purchased in Brookline by a syndicate, who are to hold it in trust for the school. Early in the spring work will be begun on the physiological laboratory, for which $50,000 has been voted from the Henry L. Pierce bequest. The idea of President Eliot is to have all the departments of applied biology united in one grand school.

## MICHIGAN.

DR. F. JOSEPHUS GRONER, Grand Rapids, has been appointed consulting physician at the Soldiers' Home.

TEACHERS throughout the state are to be furnished the "Data and Statements" of the State Board of Health, to assist them in instructing their pupils in hygiene and sanitation.

IT IS REPORTED that, despite the law compelling physicians to register in the county clerk's office on penalty of fine, 55 in Macomb County alone have failed to comply with the law.

THE STATE Board of Health has issued its 10th edition of "Instructions to Consumptives and Their Friends." It is an instructive leaflet, publishing in concise form a store of advice.

"IRREGULARS," numbering 114, were practicing medicine in Berrien County a year ago. Now, thanks to the new law and its enforcement by the State Board of Registration in Medicine only 15 remain, and their local professional life is likely to be very brief.

INCLUDING REPORTS by regular observers and others typhoid fever was reported present in the state in 262 places; consumptives at 177 places; scarlet fever at 31 places; whooping cough at 24 places; cerebrospinal meningitis at 12 places, and smallpox at 4 places.

THE CONTROVERSY between the State Board of Health and certain Detroit physicians regarding reporting cases of tuberculosis has been passed on by the Supreme Court, which holds that there is no danger line that the courts can take judicial notice of, and that the question is one for a jury to decide. A new trial was therefore ordered.

FOR SEPTEMBER, 1900, compared with the average for September in the 10 years, 1890-99, scarlet fever and typhoid fever were more prevalent; cholera infantum, measles and cholera morbus much more prevalent; diphtheria, consumption and pneumonia less prevalent, and whooping cough and remittent fever much less than usually prevalent.

TWO BLACK-LISTS are to be published by the Detroit Physicians' Business Association, one containing the names of those who fail to pay their physicians, and the other, the names of physicians who attend black-listed patients. For the latter crime a fine of $5 to $25 is imposed. It also proposes to promulgate a uniform fee-bill and to assess each member $1 for the family of each deceased member.

## MINNESOTA.

HAMLINE UNIVERSITY, medical department, held its opening exercises, October 1. Prof. Norman Dreisbach delivered the opening address.

DR. PETER J. MCCORMICK, Yazoo City, has brought suit against the estate of the late Capt. R. C. Shepherd, for $6000 for professional services. The executor claims that the bill is exorbitant and will contest it.

A PLAN of medical inspection of schools has been submitted to the Minneapolis Board of Education by Drs. Richard O. Beard and Henry M. Bracken, who urged its adoption. It contemplates the appointment, by the board, of four medical inspectors at a nominal salary, who will appoint a staff of unsalaried assistant physicians, each of whom will make a daily visit to the schools to which he is assigned, examine sick children, advise the teachers what to do, and report to the medical inspector.

## MONTANA.

THE HEALTH OFFICER of Helena sent two cases of suspected smallpox to the county hospital, September 23.

BIDS FOR CONSTRUCTING a twelve-room brick hospital and hospital steward's house at Fort Keogh have been secured by Col. Pond, department quartermaster. The bids on the hospital range from $23,087 to $31,917.

SMALLPOX is rampant in Butte. In the week ended September 24, nineteen cases were sent to the isolation hospital. The authorities have awakened from their apathy and have empowered the city physician to use his discretion regarding compulsory vaccination.

## NEW YORK.

Dr. Lucian Howe, Buffalo, has returned from Europe.

A serious epidemic of diphtheria is reported from Ithaca.

The health officer of Troy reports for the month of September 33 deaths and only 13 births.

Dr. William C. Krauss, Buffalo, has been made one of the associate editors of the *Psychiatriche Wochenschrift*, published under the direction of Dr. J. Bresler, of Freiburg (Schliesin), Germany.

Dr. Frederick A. Cook, Brooklyn, who accompanied the Belgian antarctic expedition in 1897, as surgeon, has written his experiences in a volume entitled "Through the First Antarctic Night."

On October 5 the cornerstone of a new hospital at Oneonta was laid with appropriate ceremonies. The building is to be erected and supported by Col. Reuben E. Fox, and, in memory of his wife, is to be known as the Aurelia Osborn Fox Memorial Hospital.

### New York City.

The Cornell Medical School opened in its new home, October 2, and on October 5 President Schurman, of Cornell University, formally accepted the building in the name of the university.

The fiftieth anniversary of the marriage of Dr. and Mrs. R. Ogden Doremus occurred on October 1. Dr. Doremus equipped the first laboratory in this country for instruction in analytical chemistry. He has been a professor in Bellevue Hospital Medical College and in the College of the City of New York for over thirty years.

## OHIO.

Dr. Charles W. McGuire, Toledo, has been appointed demonstrator in the chemical laboratory of the Toledo Medical College.

Dr. Yeatman Wardlow was married to Mrs. Lillian Beatty, widow of General Beatty, of Cincinnati, at Asheville, N. C., September 27.

### Columbus.

Dr. R. H. Wilson has started for Bluefields, Nicaragua, where he has accepted a position with a rubber company.

All-night street-car service is demanded by the Columbus Academy of Medicine, which passed with but one dissenting vote, resolutions presented by Dr. William U. Cole, providing for a half-hour all-night schedule.

Dr. Robert E. Ruedy, assistant physician at the State Hospital for the Insane, has resigned and will take up practice in Cleveland. At an entertainment given in his honor, September 28, the officials and employees of the hospital presented him with a handsome chair.

At the meeting of the State Medical Board, October 3, it developed that none of the osteopaths of the state had availed themselves of the privilege accorded them by the last legislature of securing a license to practice by passing an examination. The members of the board are in doubt as to whether the osteopaths are preparing to leave the state or mean to fight the law in the courts.

The health department of Columbus has ordered that the inmates of houses of prostitution be regularly examined each week by the nearest district physician. It is thought that by thus having the members of the department assume the responsibility, the spread of venereal diseases could at least in part be prevented. As a result of the order there has already been a clash between the department and the physicians doing contract work with these houses.

### Cincinnati.

Miami Medical College opened for its fall session, October 2.

Drs. Oliver P. Holt and Edward S. McKee have returned from Europe.

The Cincinnati College of Medicine and Surgery commenced its work for the college year, on October 2.

The new buildings for the City Branch Hospital for Consumptives will be ready for occupancy about Jan. 1, 1901.

The Medical College of Ohio opened for regular routine work, October 4. Prof. Phineas S. Conner and Dean Thaddeus A. Reamy welcomed the students.

At the regular monthly meeting of the board of trustees of the City Hospital, it was decided that each member of the interne staff should serve a term of six weeks at the consumptive hospital.

## PENNSYLVANIA.

Dr. J. W. Worrell has moved from Brownsville to Pittsburg.

Dr. Thomas E. Roche and Miss Bridget G. Mulvihill, both of Renovo, were married, September 25.

Pittsburg has an increasing number of deaths from violence. In 1894, 290 bodies were received at the morgue; in 1895, 311; in 1896, 328; in 1897, 326; in 1898, 409; in 1899, 490, and in 1900 up to September 25, 499.

On account of the prevalence of smallpox at Erie, the public schools will not be opened for two weeks, in order to permit all the pupils to be vaccinated. There are 7 cases under quarantine, and no new cases have developed for several days.

Warrants have been issued in Pittsburg for the arrest of 419 dealers of oleomargarin. It is said that of 800 samples of butter examined, 498 were found to be oleomargarin. All told, 647 suits have been instituted. At Hollidaysburg the State Pure Food Commission has caused a number of arrests to be made for this offense. Six dealers were also placed under arrest for selling impure milk.

On October 3 a boy living at Chambersburg fell from a gate and fractured his leg. His father, it is said, picked the boy up and began singing a hymn, and did not send for a physician because he was a believer in the faith cure. A member of this sect was therefore called in and religious services were held. Subsequently the father called in a physician, who reset the bones. The district attorney has warned the father that if the boy is made a cripple or dies he will be held criminally responsible.

Dr. Henry Beates, president of the State Board of Medical Examiners of Pennsylvania, is making a thorough examination into the character of an institution which is known both as the Delaware University and University of Delaware, with headquarters located in a saloon, at Wilmington, Delaware. It is believed that the incorporators were a saloon keeper, a railroad conductor and a Doctor Foster, the latter of whom, it is said, made a thorough canvass of England and parts of Germany. England is thought to have been the first territory canvassed by this institute, but through the exposures made by certain parties they did not succeed.

### Philadelphia.

The vacancy on the resident staff of the University Hospital has been filled by the appointment of Dr. Stanton.

Dr. F. X. Dercum now occupies the chair of mental and nervous diseases, and Dr. J. C. DaCosta that of surgery, in the Jefferson Medical College.

The Common Council a few days ago appropriated for the vaccinating physicians of the city the sum of $5000; and for disinfecting the schools and tanks, $2500.

The opening address at the Medico-Chirurgical College was made by Dr. Joseph McFarland, who called attention to the increased facilities offered by the laboratory recently constructed.

During the past summer a number of improvements have been made at the University Hospital. Eight new rooms have been added to the private wards, and a new medical ward for children has been established.

Through the will of Charles Edward Orme an estate valued at $50,000 has been left to the Episcopal Hospital to maintain as many free beds as the income will support, the same to be known as the "Charles Edward Orme Free Beds."

The Home of the Holy Child for Colored Children, located at 627 North Forty-third street, has been placed under strict

quarantine owing to the development of diphtheria among the inmates. Six cases have so far been reported. At the present time there are 26 children in the institution.

THE TWELFTH annual report of the Mary J. Drexel Home of the German Hospital has been made known and contains the following: Number of children cared for during the year, 415; number of house patients, 3199; number treated in the dispensary, 39,680; number of operations performed, 944.

DR. LEO ALEXANDROFF, who came to Philadelphia a year ago as assistant-surgeon for the Russian cruiser *Varlag*, and who decided to remain in this country, and to that end left his ship and took out his first papers, is now in the custody of the United States court, the Russian government having claimed him as a deserter.

DR. ALFRED STILLE'S will has been admitted to probate and bequests have been made known as follows: His medical library, manuscript, indexes of pathology and therapeutics, various medical writings and a portrait of John Hunter have been given to the College of Physicians. Various other bequests were made. The value of the estate has been placed at $80,000.

DR. JOSEPH NEFF, who has for some time been a member of the Board of Charities and Corrections, has tendered his resignation to Mayor Ashbridge. It was accepted, and Mr. William J. McLaughlin has been appointed in his stead. The physicians now on the Board of Charities are: Dr. John V. Shoemaker; Dr. E. R. Kirby; Dr. Albert Dingee, and Drs. C. S. Middleton (homeopath).

THE LAX METHODS by which poisonous drugs have been sold in this city for some time past has been a subject considered by the State Pharmaceutical Examining Board during the past week. A special agent has been visiting the different drug stores to determine the qualification of the clerks employed and the restrictions placed on the sale of these drugs. The poison registers of the drug stores are being looked into carefully.

THE PLAN of work of the United Hebrew Charities is to be largely remodeled after that of Chicago and Cincinnati. By this method, instead of giving separate entertainments and donations for individual charities, the whole organization should receive donations and carry on the necessary work. The society's physicians during the year made 20,748 visits. The total receipts had been $47,238.29 and the disbursements $44,547.84.

AT THE University of Pennsylvania, owing to the many changes in the curriculum, the high grading, and lengthened course in the department of medicine, the number of students is reduced to a limited extent. The new schedule provides that juniors having elected the biological course may matriculate in the medical school, at the same time taking the necessary branches in the colleges. In this way they will receive the college degree and likewise will be admitted to the second year class of the medical department on completing the college course.

A MOVEMENT has been set on foot at the Jefferson Medical College to establish a memorial to the late Professor Jacob M. da Costa. This idea was recommended by the faculty and was first proposed by the Hon. William Potter in his opening address to the students of the Jefferson Medical College last week. The following resolution was adopted: "Resolved, That for the purpose of commemorating the eminence of the late Professor Jacob M. Da Costa as a member of the faculty of this college, his notable career as a physician and his distinguished services to humanity and to the advancement of medical science, a laboratory of clinical medicine, to be known as the 'J. M. Da Costa Memorial Laboratory of Clinical Medicine' shall be established in connection with the Jefferson Hospital; and that the medical profession, the friends of Dr. Da Costa, and any others who may desire to contribute to the fund needed for the establishment of such laboratory shall be given the opportunity of subscribing thereto." The following committee was appointed to receive subscriptions: Simon Gratz, chairman; Judge Sulzberger, Dr. W. W. Keen, and Dr. James C. Wilson.

## CANADA.

DR. J. J. MCFADDEN, Neepawa, Man., has been appointed superintendent of the Insane Asylum at Brandon.

TYPHOID FEVER has been very prevalent in all parts of the city of Winnipeg, but it is now being got under control.

THE HON DR. SULLIVAN is resuming lectures in surgery to Queen's medicos after an absence of one year through sickness.

THE DIRECTORS of the Lake of the Woods Milling Company at their annual meeting, held last week, voted $2500 to the Winnipeg General Hospital and $500 to the St. Boniface Hospital, Winnipeg.

DR. C. J. FAGAN, provincial health officer of British Columbia, is having the Indians on the local reserves vaccinated as a precautionary measure. There seems to be danger of the introduction of smallpox into Victoria.

THE ST. THOMAS (Ont.) Medical Society is endeavoring through its members to have the rate per capita for lodge work raised, and the fraternals are threatening in their opposition to this unpopular procedure to import other physicians into that city.

DR. FIFE FOWLER, who has been connected with Queen's University medical department, Kingston, for fifty years, has resigned the position of professor of the practice of medicine. Dr. James Third, late superintendent of the Kingston General Hospital, is his successor. Dr. Fowler will retain the honorable position of Dean of the Medical Faculty.

DR. W. T. BARRETT, medical superintendent of the Samaritan Hospital, Dawson City, arrived in Winnipeg Oct. 1, on his way to visit the hospitals of London and Edinburgh. He states that when he left Dawson the population of that place was more than usually healthy. There is now only one case of smallpox, and other infectious diseases are very scarce. In the doctor's opinion, the Yukon is an eminently healthy country. Dr. Barrett was for several years connected with the St. Boniface Hospital, Winnipeg.

### Toronto.

THE DEPARTMENT of Dr. J. J. Mackenzie, professor of pathology in the medical department of Toronto University, is being equipped to the extent of $4000.

IN THE medical department of Toronto University 110 students have been enrolled in the freshman class this year as against 103 in 1899, 73 in 1898 and 61 for the term of 1897-98. Several additions have been made to the staff of demonstrators.

QUEEN'S UNIVERSITY may appeal to the Ontario Parliament at its next session for a grant for carrying on its work. Toronto University being the only University in the province receiving aid from the government, will necessarily look askance at such a proceeding, being also fearful that Queen's might be raised to the status of a provincial university for the eastern portion of the province.

#### REAMALGAMATION OF TORONTO AND TRINITY.

Sir William Meredith, the new Chancellor of Toronto University, addressing Convocation, which was held on the campus on the afternoon of Oct. 2, spoke concerning this matter. He paid a high tribute to the ability of the medical profession; and thought that while there was another teaching body in the city, they should be on good and fair terms with every school. The subject was now under discussion, and he expressed the sincere hope that some means could be devised by which the energies of the men connected with both schools may be combined for the purpose of promoting the advancement of medical education in this country.

THE EXECUTIVE of the Ontario Consumption Association met in Toronto last week and prepared an application to the city council for $50,000 for a consumption sanatorium, to be authorized by the people at the municipal elections in January next. To show their good faith in the movement, the Association will undertake to raise $30,000 by popular subscription, the city will then provide the $50,000, which, with the offer of the treasurer of the National Association of $20,000, will make

$100.000, the amount necessary to erect and maintain an institution of 100 beds at first. A suitable site for the building, about nine miles from Toronto, has been secured.

### Montreal.

Dr. Laberge, city health officer, has returned from Paris.

Dr. J. Alton Harris has returned from active service in South Africa.

The last case of smallpox has been discharged from the civic hospital.

The Medical Faculty of Bishop's College opened on October 1, with a fairly large attendance of students.

The Medical Association for St. Frances Xavier District met in Sherbrooke last week. An important question discussed was that of a medical tariff, and it was decided to publish the discussion in the Montreal and country papers, so that there might be a clear understanding between the physicians and public generally on the subject.

## FOREIGN.

The library of the great chemist, Bunsen, is now being sold at Leipsic.

Lannelongue, of Paris, has been made a commander of the French Legion of Honor.

The professor of psychiatry at Jena, Dr. Ziehen, has accepted a call to the chair of psychology at Utrecht.

The friends of Senator and Busch, of Berlin, celebrated the twenty-fifth anniversary of their connection with the faculty September 14.

Another medical victim to the Swiss glaciers is Dr. Max Schaeffer, a promising young rhinologist of Bremen, who was found dead in a crevasse.

The court physician to the Ameer of Afghanistan is, or was until recently, a woman. Her name is Miss Lillias Hamilton, M.D., Brux. and London School of Med. for Women.

Yersin was awarded the Audiffred prize of 15,000 francs last spring for "his acts of devotion," and has applied the sum to the extension of his plague-serum laboratory at Nha-Trang.

Menelik, Emperor of Ethiopia, has been awarded the first prize on the list offered by the French Society against the Abuse of Tobacco, as he prohibited the use of tobacco throughout his dominions under severe penalties.

The death of Sir William Stokes in South Africa was followed in a few days by that of his talented sister, Miss Margaret Stokes, in Dublin. She was the author of several noted works on Irish ecclesiastical architecture and archeology.

The friends and admirers of Professor Potain, of Paris, propose to present him with a souvenir medal on the occasion of his retirement from the Charité next spring. Subscriptions are received by P. Masson, 120 Boulevard Saint-Germain.

The friends of Dr. Li Willems, of Hasselt, Belgium, have called upon all who profited by his discovery of preventive inoculation of pleuropneumonia in cattle to co-operate in celebrating his fiftieth professional anniversary, October 14.

The Graefe prize for the best works that appear in von Graefe's *Archiv f. Ophthalmologie* during the years 1896 to 1899, has been divided between Dr. Hess, for his work on "Accommodation," and Bernheimer, for his studies on the "Nucleus of the Motor Oculi."

El Siglo Medico announces that the Spanish government has appropriated $8000 to enlarge Dr. Cajal's laboratory at Madrid, with $4,800 annually for its maintenance and a pension of $1,600 for the distinguished scientist, on whom the Moscow prize was bestowed by the International Medical Congress.

The pilgrims constantly arriving at Rome to celebrate the "holy year" are filling the streets with beggars and the hospitals with incurables. The sanitary conditions are menaced by this state of affairs and the Italian minister of the interior has issued an order forbidding the further organization of pilgrimages composed entirely of the sick and indigent.

The new laboratories at Manguinhos, Brazil, for the production of plague serum and vaccin are completed and are models in every respect, the *Brazil Médico* asserts. The different pavilions are on separate hills, about 1500 feet apart, with the building for the horses in the valley between. The entire establishment is in charge of Prof. Pedro Affonso and Oswaldo Cruz.

The *Deutsche Med. Woch.* states that the calendar published by the Vienna *Bote* has been confiscated by the authorities on account of the advertisements contained in it of Thierry's "Wunderbalsam" and salve. Another calendar has shared the same fate on account of advertisements of a charlatan in Saxony and the salve of a firm in Budapesth. The Bohemian authorities have forbidden the "Nature-Healing Company" to establish new branch establishments.

The French Railway du Nord has constructed a two-story building in connection with its Paris depot for receiving and caring for the injured in an accident. Every detail to ensure asepsis and ample illumination day and night has been carefully studied. The three large rooms on the first floor can be thrown into one if required. There are waiting and consultation rooms, facilities for massage and radioscopy and the numerous attendants are drilled regularly in the entire processes of preparing for and applying first aid after notification that an accident has occurred. The Lariboisiere Hospital is close at hand and very severely injured persons will be taken directly there, but those requiring merely temporary care will be treated at the railroad emergency station.

# Correspondence.

### Degeneracy in the Army.

Chicago, Oct. 4, 1900.

*To the Editor:—The American Journal of Insanity* for July contains an article by Dr. Charles E. Woodruff on "Degeneracy in the Army," and remarks anent army musicians that "with the high musical sense there seems to be a liability of inferiority in some other ways, for they possess physical stigmata in far greater proportion than does the average soldier. They have to be managed by entirely different rules of discipline." What is true of army musicians is also true of musicians in state institutions for defective classes, etc. The most degenerate individuals of an institution are usually to be found among the members of the band. In many cases they are the most difficult to manage. A notable illustration is that of the band at the New York State Reformatory at Elmira. At one time more than two-thirds of the band were dressed in the uniform of the lowest grade; physical stigmata were so marked as to attract special attention.

It should also be remembered that marked imbecility may co-exist with great musical powers, as witness the case of "Blind Tom." Music, being one of the primitive arts of the race, is hence less likely to be affected by degeneracy than later-acquired arts.

Eugene S. Talbot, M.D.

### A Uniform Classification for Health Statistics.

Lansing, Mich., Sept. 17, 1900.

*To the Editor:*—Referring to your editorial in The Journal of September 15, under the above title, I desire to say that it gives a somewhat imperfect impression of the nature and progress of the movement for the adoption of a uniform classification of causes of death, which is now an assured success. As the subject is one of very great practical importance, I trust that you will afford me the opportunity of making a more correct statement of the facts.

In the first place the classification quoted by you on page 706 in the report of the proceedings of the International Congress of Hygiene and Demography is evidently one of the most condensed forms of the Bertillon classification, and does not fully exemplify its nature as usually employed. This classification is not merely the "Paris classification, but is the classifi-

cation recommended for adoption to the International Statistical Institute by a committee headed by Dr. Jacques Bertillon at its session in Chicago during the World's Fair in 1893. Since that time it has been employed in Paris, Moscow, Madrid, Buenos Ayres, Montevideo, Havana, Boston, Baltimore, Buffalo, Milwaukee, Toledo, and many other cities of this country, besides in the States of Michigan, Vermont and Indiana and the Canadian Provinces of Ontario and Quebec. The classification reported by Dr. Bertillon's committee to the International Statistical Institute was in three forms, viz., an extended or full classification, a short form and an intermediate form. The long form is that usually referred to and is best adapted to the use of states and large cities. It contains about 160 titles, instead of the 38 given by your correspondent from Paris, and is abundantly full for all ordinary statistical purposes. The short forms are presented merely for the use of such cities as may find a condensed list more convenient for use.

The American Public Health Association did not adopt the system at Philadelphia in 1897, regarding it as a measure of very far-reaching importance and one requiring the fullest consideration. After the lapse of a year, however, at Ottawa, Canada, in 1898, the cordial assent of the Association was given, and as I believe, has been a factor of great importance in uniting the registrars of South America, Central America and Europe, with the exception of England only, in the adoption of a uniform classification for the world. I may also say that the International Conference of State and Provincial Boards of Health indorsed the system most fully at the meeting held at Detroit in 1898 just prior to the session of the American Public Health Association at Ottawa.

The action of the American Public Health Association in 1898 not only provided for the general adoption of the classification by the registration offices of Canada, Mexico and the United States after its revision, but also provided a plan for that revision and recommended that it be held at Paris in 1900 under the auspices of the International Congress of Hygiene and Demography. This plan was indorsed fully in its general features by the International Statistical Institute at its session at Christiania, Norway, in 1899, and its completion constitutes the first decennial revision of the International Classification, which you have just announced. It is intended that such a revision shall be made every ten years, with the full-co-operation of all of the registration offices employing the system, to the end that the classification shall be kept fully abreast of the advances of medical science. Unless this is done, it will rapidly grow obsolete, as have many of the systems now in use in this country, which are soon to be supplanted by the modern classification.

A short paper on this subject of uniform classification was read by me before the Section of Hygiene and Sanitary Science of the AMERICAN MEDICAL ASSOCIATION at the last meeting, at Atlantic City, N. J., and a resolution was passed in its favor by the Section. This resolution was indorsed by the Executive Committee, but failed to carry in the general session, owing, I believe, to the expressed opinion that the subject was a new one and the Association unprepared to take immediate action. As so much has been done since 1893, including the adoption of the system by nearly every registration State in the Union, I wish that this information could be brought generally to the knowledge of the members of the Association, so that they may be sufficiently informed to act at some subsequent session of the Association.

Dr. Bertillon informs me that the revised classification will be ready for publication in about a month, and I trust that the American Public Health Association, at its meeting soon to be held at Indianapolis, will make provision for at once preparing a translation and getting it into the hands of American registrars and public health officials, so that its use can be begun promptly on January 1, 1901. We shall then have a definite basis, alike in all parts of the country, on which to base our public health work, and as a result we may fairly expect a much increased use of mortality statistics in sanitary work, of which they form the indispensable foundation.

CRESSY L. WILBUR, M.D.

[If the Bertillon classification is to be universally adopted it is to be hoped it will receive the modification it needs. Up to the present time we can not consider it a satisfactory one by any means; it is in some respects out of accord with modern pathologic ideas and almost ridiculous in some of its minor details, as given in the pamphlet published in this country. —ED.]

# Book Notices.

PRACTICAL GYNECOLOGY. A Comprehensive Text-Book for Students and Physicians. By E. E. Montgomery, M.D., Professor of Gynecology, Jefferson Medical College. With 527 illustrations, nearly all of which have been drawn and engraved especially for this work, for the most part from original sources. Cloth. Pp. 819. Price, $5.00. Philadelphia: P. Blakiston's Son & Co. 1900.

Fashion in medical book-making seems to be running to the composite, which may be advantageous, and the means of producing a better book than one written by an individual. It may be the old-fashioned notions of the reviewer, but he believes in the old idea of one book, one author, and he should have all the responsibility, all the criticism and all the glory that attach to it. The composite is likely to be written under a "rush" order; so much space, in so much time, for so much money. The work before us is the work of one individual, and the personality of that individual is evident through the whole book.

The author tells us in the preface that it has been under consideration for fifteen years and that much of it has been rewritten several times. This may readily be believed, for the result shows painstaking effort in every detail, in conciseness of statements, in arrangement of subjects and in the systematic order and completeness in which each is considered. The general plan is entirely different from that usually adopted. Instead of a division into chapters, the book is divided into sections, consecutively numbered, and with heavy black-faced "side-heads." While such an arrangement as the author uses has many advantages—an important one being an easy reference to any subject—still it has a drawback in the fact that the main subject is given no more distinctive heading than its subdivisions. This objection, however, may be more apparent than real when one becomes used to the style. By the way, the various lacerations of the pelvic floor, vaginal fistula, etc., are classified under the general head of "malformations," possibly correctly so, but hardly, according to the generally accepted meaning of the term. The manner in which the author considers the subjects of diagnosis and methods of examination shows that he appreciates the needs of the student, the difficulties to be encountered and the importance of a thorough understanding of gynecological examinations. The technique of the various operations, even the minor ones, is described in sufficient detail to enable the student to understand every stage of procedure. This, with the wealth of illustrations, makes the appreciation of the various stages an easy matter.

The author is neither too radical nor too conservative in his consideration of the conditions that may need radical operations. In the introduction he tells us that the true gynecologist must be "so conservative that he will sacrifice no organ whose physiologic integrity is capable of being restored; so bold and courageous that his patient shall not forfeit her opportunity for life or restored health through his failure to assume the responsibility of any operative procedure necessary to secure the object." This is the basal idea that permeates the book; the ultra-radical operator will find no endorsement, and the "tinkering" gynecologist—he who treats all diseases of women by means of a pledget of cotton and a speculum—no encouragement in its pages.

The book is one that can be recommended to the student, to the general practitioner—who must sometimes be a gynecologist to a certain extent whether he will or not—and to the specialist, as an ideal and in every way complete work on the gynecology of to-day—a practical work for practical workers.

A Manual of Surgical Treatment. By W. Watson Cheyne, M.D., F.R.C.S., F.R.S., professor of surgery in King's College, London, and F. F. Burghard, M.D., M.S., F.R.C.S., teacher of practical surgery in King's College, London. Volume III. The Treatment of the Surgical Affections of the Bones; Amputations. Cloth. Pp. 305. Price, $3.50. Philadelphia and New York: Lea Bros. & Co. 1900.

The present volume treats of the surgical affections of the bones and of amputations. As the work is a "Manual of Treatment," the pathology, symptoms, diagnosis, etc., of the various conditions are but briefly mentioned, often to the disadvantage of the work, because the selection of some particular method of treatment so often depends on a recognition of the exact conditions present that it is advisable to discuss the points together.

In the treatment of fractures many little points are detailed which are of great value to the surgeon and which are seldom found described in text-books on surgery. The advice to immediately wire all fragments will be concurred in by most surgeons, but they would prefer to immobilize a knee-joint by splint or cast after wiring a fractured patella before allowing it to remain without fixation, as recommended.

The statement is made that the difficulty in the treatment of the so-called T-shaped fractures of the lower end of the humerus "is so great that it is almost hopeless to attempt to obtain a useful movable joint by treating the fracture merely by splinting and massage; the only probability of getting a really good result is by operative interference." This is entirely too radical, and many excellent results have been obtained in these cases by proper fixation, and better results, too, than would probably follow indiscriminate attempts to fix by pegs or wire the small cartilaginous epiphyses, as it is in young children that the majority of these fractures occur. Unquestionably there are cases attended by displacement or rotation of the fragments that would be best treated by operation, but they are not in the majority.

On the whole, the chapters on fractures are well written and the practitioner will find much information of great value in the handling of these troublesome cases. Under "Fatty Embolism," a distinct contradiction is found. Of the symptoms it is stated: "They generally come on within a few hours." A few lines farther down we find: "As a rule they (the symptoms) do not come on for some hours after the injury."

The chapters on infections of the bones, tumors, etc., are only fair. The various amputations are well described and illustrated, although several methods are omitted, as for instance, Wyeth's excellent method of controlling the hemorrhage in amputation at the hip-joint.

The volume is of convenient size and the publisher's work well done.

Surgical Anatomy. A Treatise on Human Anatomy in its Application to the Practice of Medicine and Surgery. By John B. Deaver, M.D., Surgeon-in-Chief to the German Hospital, Philadelphia. In Three Volumes, Illustrated by About 400 Plates, nearly all Drawn for this Work from Original Dissections. Vol. II. Royal Octavo, One-half Morocco, pp. 709. Price $8. Philadelphia: P. Blakiston's Son & Co. 1900. Comprises the Neck, Mouth, Pharynx, Larynx, Nose, Orbit, Eyeball, Organ of Hearing, Brain, Male Perineum, Female Perineum.

This second volume of Deaver's Surgical Anatomy is in every way up to the high standard of the first, and will make as good an impression as did its predecessor. All that we said last year of the first we would repeat of the second volume. This one covers the most important structures of the body, and the parts that baffle the student in his endeavors to master their intricacies—the head and neck. The author's descriptive style is concise, clear and easily understood, and this, with the excellent illustrations, makes his book one that will be popular, not only with the student, but with the surgeon and general practitioner. Nothing can take the place of the cadaver as a method of mastering anatomy, but Deaver's work will make an excellent substitute. The illustrations are all full page, are works of art, beautiful; but above all, are of great practical value, as they reflect perfectly the artist's true delineation of Nature. There has been an evident disregard of expense in supplying them, both as to quality and quantity. It would not be fair to the author, or true, to say that the illustrations are the more important part of the work, but they are certainly very attractive and place it in the front rank as an illustrated medical work.

Occasionally matter has crept into the text that belongs to a work on surgery and not to one on surgical anatomy. The impression the reader will get is that once in a while the author forgot himself and thought he was writing a text-book on surgery, else why so much on technique and so little on structures in several instances? Quite a number of the full-page illustrations occur twice, among them being clxi, clxii, clxiv, clxv, clxvi, clxxviii. We presume these are duplicated for a purpose, although we fail to understand what that might be.

Clinical Examination of the Urine and Urinary Diagnosis. A Clinical Guide for the Use of Practitioners and Students of Medicine and Surgery. By J. Bergen Ogden, M.D. Illustrated. Cloth. Pp. 416. Price, $3.00. Philadelphia: W. B. Saunders & Co. 1900.

This is a new work on urinary analysis, and a thorough one in its special branch of chemical examination. The author states in his preface that he has aimed to present in as concise a manual as possible the chemistry of the urine and its relation to physiologic processes, the most improved working methods, both qualitative and quantitative, the diagnosis of diseases and disorders of the kidneys and urinary passages. The book is divided into two parts. In the first part the chemical and microscopical methods are described in detail, and numerous illustrations, many original, have been introduced; it will form a convenient and satisfactory manual of its subject. The second part treats particularly of the diagnosis, including our present knowledge of the character of the urine in, and the differential diagnosis of, diseases of the kidneys and the urinary passages, with a brief statement of the different signs in the different forms of disease. A chapter is also given to the characteristics of the urine in diseases outside of the urinary tract, such as fevers, pneumonia; infectious diseases, like cholera, scarlet fever, diphtheria, tuberculosis; disorders of the intestines and of the nervous system, as well as general conditions like anemia, scurvy and certain forms of poisoning. The appendices illustrate methods of recording urinary examinations and give inventories of the reagents and the apparatus required. The work is an eminently satisfactory one and one likely to fulfill its object.

Anatomy of the Brain. A Text-Book for Medical Students. By Richard H. Whitehead, M.D. Professor of Anatomy in the University of North Carolina. Illustrated with Forty-one Engravings. 6¼ by 9½ Inches. Pp. 96. Extra Vellum Cloth, $1 net. Philadelphia: The F. A. Davis Co.

This brief and convenient manual of the general anatomy of the brain, with its numerous schematic drawings, which are a great advantage to the student, seems, as far as it goes, to represent our present knowledge of the subject. The author, as he says, thought best to omit minor details, and exclude as far as possible subjects which are still matters of controversy. The student, therefore, will find in his further studies many additional facts not here mentioned. The original names for the parts are given, but the terms adopted and recommended by the German Anatomical Society are inserted parenthetically. It would not have been inappropriate and would have been in the line of progress if the author had also parenthetically inserted the nomenclature of Wilder, some of which at least is likely to come into general use. The book is one that will undoubtedly be serviceable and can be recommended to the student.

Lectures on the Principles of Surgery, Delivered at the University of Michigan. By Charles B. Nancrede, A.M., M.D., LL.D. With an Appendix Containing a Résumé of the Principal Views held concerning Inflammation, by Wm. A. Spitzley, A.B., M.D. Illustrated. 8vo. Cloth. Pp. 398. Price, $2.50 net. Philadelphia: W. B. Saunders. 1899. W. T. Keener, Chicago Agent.

This volume is written in lecture style and is evidently intended for students. The changes which take place in normal

wound-repair are first described, and the differences between repair and inflammation clearly defined. The growth of microbes in the wound is made the distinguishing point of inflammation, and the various complications which may arise as a result of the different kinds of infections are briefly discussed. Hemorrhage, shock, methods of sterilization and the administration of anesthetics are also considered, and the volume closes with a brief historical appendix on inflammation, by W. A. Spitzley, A. B., M.D.

The work is clearly written, and expresses the author's own views, without entering deeply into the subjects. It is well adapted to give to the student a general outline of the subject and work before him.

PSYCHOPATHIA SEXUALIS. With Especial Reference to Antipathic Sexual Instinct. A Medico-Forensic Study. By Dr. R. v. Krafft-Ebing, o. ö. Prof. Für Psychiatrie und Nervenkrankheiten an der K.K. Universität, Wein. The Only Authorized English Translation of the Tenth German Edition. Cloth. Pp. 585. Price, $5.00. Chicago: W. T. Keener & Co. 1900.

It is not often that a foreign work passes through two separate translations into the English language, as is the case with the present one. The reason why this is so is rather obvious, though it can not be especially justified. The book is one of a small class that is much more widely read than it should be, by non-medical readers. Its proper place is on the reserve shelves, sometimes called "hell," of a well-conducted library. The author has enlarged it considerably, and the present translation appears to be a very satisfactory one. We can not recommend the book generally, but it will, of course, recommend itself to those who want to read it. This undoubtedly is the most complete, or at least the largest work, on its subject in our or any other language. The present volume has one advantage, or it may be such, that the Latin language is more frequently made use of than in the former editions. The author's wishes for its good reception will undoubtedly be gratified. What we object to in the work is the morbid popuarity it has gained.

IDROTERAPIA. Del Prof. Gaetano Gibelli, Proprietario del gabinetto elettro-termo-baro-idroterapico, Milano, Via Manzoni, 50 Con. 30 incisioni. Cloth. Pp. 237. Milano: Ulrico Hoepli. 1900.

The subject of hydrotherapy is given in a brief compass and apparently covering the subject. The chief thing about the work which makes an unfavorable impression occurs in the rather florid mention of certain empirics and their methods, especially Father Kneipp, who is not considered worthy of the same notice by other works. The book, however, to those who read Italian, will probably be a convenient, though limited, handy manual on the subject.

L'ASSISTENZ DEI PAZZI NEL MANICOMIO E NELLA FAMIGLIA. Istruzioni elementari per infermeiri ed infermiere. Dott. A. Pieraccini, Vice Direttore del Manicomio Provinciale di Macerata. Con Prefazione del Prof. A. Morselli, Direttore della Clinica Psichiatrica di Genova. Cloth, Pp. 64. Milano: Ulrico Hoepli. 1901.

This volume, one of the numerous Hoepli manuals, is a hand-book for instruction to mental nurses and asylum attendants, covering apparently the whole ground of their duties. It has the advantage of considering certain subjects which are not ordinarily discussed in nursing-manuals; thus the methods of transporting patients to asylums, distinctions between real and apparent death, the ethics of the business of attendants on the insane, etc., are fully discussed. It is a very excellent little work in its way.

THE MICROTOMIST'S VADE-MECUM. A Handbook of the Methods of Microscopic Anatomy. By Arthur Bolles Lee. Fifth Edition. Cloth. Pp. 532. Price, $4.00. Philadelphia: P. Blakiston's Son & Co. 1900.

This is the fifth edition of a work which has been before the medical public for a number of years; revised up to date. A number of references and methods have been eliminated as superfluous, and repetition and unnecessary amplifications have been avoided so as to keep the book within the old limits of size. Considerable new matter in regard to methods has been added. The book will maintain its former popularity not only with the medical profession, but with biologic workers as well.

CLINICAL EXAMINATION OF URINE WITH AN ATLAS OF URINARY DEPOSITS. Including Forty-one Original Plates. Mostly Colored. By Lindley Scott, M.A., M.D. Cloth. Price, $5. Philadelphia: P. Blakiston's Son & Co. 1900.

In addition to the two books noticed above, we have this one which has the special advantages of presenting in large plates, colored and otherwise, the microscopic features observed in urine examinations. The principal methods and tests are also given, and while not extensive in its scope it will undoubtedly meet with favor among those who wish a convenient, handy, and brief manual of its special subject. It is handsomely gotten up, and the illustrations are scientifically correct, as well as otherwise excellent.

PRACTICAL URANALYSIS AND URINARY DIAGNOSIS. A Manual for the Use of Physicians, Surgeons, and Students. By Charles W. Purdy, LL.D., M.D., Fellow of the Royal College of Physicians and Surgeons, Kingston. Fifth Revised and Enlarged Edition. With Numerous Illustrations. Including Photo-engravings and Colored Plates. Cloth. Pp. 392. Price, $3.00 net. Philadelphia: F. A. Davis Co. 1900.

This book is evidently being well received, as it is the fifth edition within six years, thus showing that it has met with the favor of the profession. The author has extended it considerably, bringing in accounts of new methods, adding new tables and giving it a general revision.

MEDICAL DIAGNOSIS WITH SPECIAL REFERENCE TO PRACTICAL MEDICINE, a Guide to the Knowledge and Discrimination of Diseases. By J. M. Da Costa, M.D., LL.D., physician to the Pennsylvania Hospital. Illustrated. Ninth edition, revised. Price, $5.00. Philadelphia and London: J. B. Lippincott Company. 1900.

This work has been thoroughly revised, partially rewritten, and brought up to date in all its departments. Da Costa's has for years been recognized as a standard text-book on diagnosis, and this revision has made it possible for it still to maintain the enviable position it has held so long.

## Deaths and Obituaries.

SAMUEL SMITH PURPLE, M.D., died at his home in New York, from heart disease, September 29, aged 78. He was graduated in 1844 from the University of the City of New York. His earliest attention was given to medical editorship, dispensary work and society organization. A special fondness for medical history and biography with a genealogical bias was subsequently developed. He was editor-in-chief of the *New York Journal of Medicine* from 1848 till 1857; president of the New York Academy of Medicine in 1875, and re-elected in 1877; and president of the Alumni Association of the Medical Department of the University of the City of New York, from 1867 till 1871. He made the first donation of 4000 volumes to the library of the Academy of Medicine. At the time of his death he owned one of the largest private libraries in New York, containing many exceedingly rare volumes.

THEODORE N. WISE, M.D., died September 26, at his home in Covington, Ky., from Bright's disease, after a long illness. He was born at Alexandria, Va., June 29, 1817, was graduated from the Medical College of Ohio in 1837, and immediately began the practice of medicine in Covington.

JOSEPH F. MULCAHY, M.D., Lowell, Mass., died after a long illness, September 24, aged 36. He was a graduate of the medical department of the University of New York, in 1891, and was dispensary physician and a member of the staff of St. John's Hospital for several years.

JOSEPH TREPP, M.D., one of the oldest practitioners in Adrian, Mich., a graduate of the medical department of Western Reserve University, Cleveland, O., in 1854, died September 25, as a result of accidental injuries recently received, at the age of 73.

CLARE W. VIRTUE, M.D., who was graduated from the College of Physicians and Surgeons, Chicago, in 1897, and settled in Akron, O., died September 28, at the age of 30, after a five weeks' illness of diphtheria contracted from a patient.

ROBERT B. SIBLEY, JR., M.D., a graduate of the University of Louisville medical department in 1898, who was obliged to go to Colorado by reason of lung disease, locating in Aspen, died recently from consumption.

RICHARD H. WHITE, M.D., a graduate of Trinity Medical College, Toronto, in 1891, and physician of the lung department of the New York Nose and Throat Hospital, died from phthisis, at Liberty, N. Y., September 26, aged 32.

JAMES M. MONTMOLLIN, M.D., formerly surgeon of the Chesapeake and Ohio system, died after a long illness, at his home, Ashland, Ky., September 24. He was graduated in 1862 from Jefferson Medical College, Philadelphia.

JAMES A. INGRAM, M.D., a graduate of the medical department of Western Reserve University, Cleveland, O., in 1880, and a practitioner in Cleveland since that time, died September 24, from Bright's disease, aged 41.

GEORGE F. KOEPSTEIN, M.D., who studied at the University of Breslau, received his degree in 1886, and had practiced for several years at Guttenberg, Ia., died at Finley Hospital, Dubuque, September 28.

S. POTTS EAGLETON, M.D., formerly of Philadelphia, a graduate of the University of Pennsylvania in 1890, and assistant-surgeon to Will's Eye Hospital, died at his home in Ocala, Fla., aged 33.

JAMES A. MOORS, M.D., who was graduated from the college of Physicians and Surgeons, New York, died, September 26, after fourteen years of invalidism at West Winfield, N. Y., aged 43.

SAMUEL S. DOWNS, M.D., Waterville, Ohio., a graduate of Miami Medical College, Cincinnati, in 1873, died after a long illness from tuberculosis, in Ellsworth, Kan., September 18.

H. FINLEY BURT, M.D., who was graduated from the medical department of the University of the South, Sewanee, Tenn., in 1892, died at Sweetwater, Tex., September 26, aged 34.

EDWARD N. WEBSTER, M.D., St. Louis, Mo., who was graduated from Barnes Medical College in 1893, died September 25, four days after a surgical operation, aged 32.

LINNAEUS G. WILLIAMS, M.D., Fostoria, O., who was graduated from the University of Wooster, medical department, Cleveland, in 1876, died suddenly, September 24.

HENRY JERVEY, M.D., Subletts, Va., who was graduated from the Medical College of the State of South Carolina, Charleston, in 1861, died after an illness of six months.

THOMAS J. CONRY, M.D., a graduate of Kansas City Medical College in 1871, formerly surgeon for the Santa Fe Railroad, died September 15 at Seguro, Colo., aged 61.

JAMES W. BRYANT, M.D., Richmond, Va., who was graduated in 1844 from the department of medicine of the University of Pennsylvania, died September 29, aged 80.

WILLIAM H. MUNN, M.D., a graduate of New York University, medical department, in 1868, died at Bellevue Hospital, September 24, from cerebral congestion.

CURTIS F. HAWLEY, M.D., died at his home in Fairfax, Vt., September 24, aged 74. He was graduated from Castleton Medical College, Vermont, in 1849.

DAVID F. RODGERS, M.D., Kansas City, Mo., a graduate of the Medical College of Indiana, Indianapolis, in 1881, died recently at Cape Nome, Alaska.

EDWARD PATTERSON, M.D., Mechanic Grove, near Lancaster, died September 24, aged 66. He was a graduate of Jefferson Medical College, Philadelphia.

SAMUEL S. DOWNS, M.D., Waterville, O., who was graduated in 1873 from Miami Medical College, Cincinnati, died recently in Kansas.

JAMES M. MARTIN, M.D., one of the oldest and most prominent physicians of Brookhaven, Miss., died September 22, aged 73.

# Miscellany.

**Obstruction of Common Bile-Duct by an Ascaris.**—P. Ferrari relates in the *Brazil Medico* a case where the diagnosis wavered between obstruction of the common bile-duct and suppurative hepatitis; the patient was previously a healthy woman. Exploratory puncture was negative, but at the autopsy the duct was found plugged with a macerated ascaris, 20 cm. long.

**Last Sign of Life.**—W. D. Waller presented to the Paris Acadèmie des Sciences, as related in the *Bulletin Médical*, Sept. 29, the galvanometric test based on the fact that living matter responds to electric stimulation by a current in the same direction. The same matter after it has been deprived of life, fails to respond at all to electric stimulation or else starts a contrary current of polarization.

**Alvarenga Prize.**—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, amounting to about $180, will be made on July 14, 1901. Essays intended for competition may be on any subject in medicine, but can not have been published, and must be received by the secretary of the college on or before May 1, 1901. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author.

**Autofixation of Movable Kidney.**—Biondi has been very successful in suspending a movable kidney in thirteen cases without sutures or threads, and recommended his process at the International Congress. He exposes the organ and removes the adipose and fibrous capsules, then tampons it in place with a long strip of gauze wound in and out to fill the entire space in front of the lower pole and below the kidney. The decapsulated organ becomes firmly fastened by granulation tissues in the course of a week, when the gauze is removed. Tests on dogs showed that a new fibrous capsule forms which peels off readily. The kidneys thus treated in his cases retained their weight and showed no appreciable alteration.

**Rupture of Vulvar Varices During Delivery.**—In 19 cases that have been published, 11 of the patients died, all but three in less than thirty minutes. In three the hemorrhage was controlled and in four it was comparatively slight. The great danger is that the source of the hemorrhage is assumed to be the uterus and the real origin is not discovered until too late. Besson, in the *Jour. des Sci. Méd. de Lille*, urges systematic examination to detect the presence of varices in the vulva. They are usually situated at the upper portion of the labia minora. In grave cases a suture *en masse* is indicated, with injections of artificial serum. These measures saved a patient in his experience, a III-para of 24. As the head was delivered the blood flowed "in cascades" from the varix, which had been previously noticed. The hemorrhage was controlled in ten minutes, but the radial pulse had entirely disappeared.

**Infections and Leukemia.**—E. Weil observes that the complications are usually the cause of death in leukemia. Even when they are local they have a tendency to rapid generalization. They are usually due to increased virulence of the saprophytes of the alimentary canal, and may terminate in recovery if they remain local. Every infection has a tendency to diminish the leukemic tumors, but the streptococcus has the most pronounced influence in this respect. The leucocytosis is also affected, an ordinary polynuclear leucocytosis taking the place of the previous formula in myelogenic leukemia. In chronic lymphatic leukemia on the other hand, the infection may increase the total leucocytosis to an extreme extent, chiefly at the expense of the mononucleated cells. The polynucleated increase but slightly. The eosinophiles disappear and nucleated reds frequently appear or increase in number. In acute leukemia the leucocytosis diminishes and there may be complete leucolysis. The proportion of polynucleated to mononucleated is slightly increased, the hemoglobin slightly diminished.

**Cocain for Differentiation and Relief of Neuralgia.**—To determine whether surgical intervention is liable to cure re-

bellious neuralgia, Pitres injects 1 to 2 cg. of cocain on the route of the affected nerve. If the pain persists undiminished by the cocain the neuralgia is probably of central origin and intervention would be fruitless. If the pain is abolished by the cocain the lesion is probably peripheral and an operation has every chance of curing by removal of the nerve causing the neuralgia. It should always be divided above the part involved and the exact point can be established with the cocain. The lancinating pains in ataxia can be relieved for three hours by intraspinal injection of about 15 mg. of cocain, which is also usually effective in relieving the pain of sacrodynia, coccydynia, talalgia, etc., in the absence of organic lesions. Some of these neuralgias may be permanently cured by this procedure.—*Int. Med. Congress.*

**Treatment of Mucomembranous Colitis.**—At the Thirteenth International Medical Congress held recently at Paris, Mathieu recommended among other things, correction of the constipation that is usually present. For this purpose measures should be employed that do not increase the secretory irritation, the pains or the tendency to spasm. Castor-oil, large enemata and belladonna are especially useful. The first should be given in small doses in the morning before breakfast. Its employment should alternate with that of the large enemata, which should be given at low pressure, slowly and at a temperature of about 104 F. in amounts of from 3 to 5 pints. These enemata soothe the painful and spasmodic irritation of the intestines, induce evacuation of the material accumulated within it, and act as a mechanical antiseptic. They may consist of boiled water with a weak solution of sodium biborate or sodium salicylate, or a dilute solution of neutral ammonium ichthyolate. Care should be taken to avoid all agents likely to cause irritation of the bowel, such as drastic purgatives, astringent injections and massage in cases attended with marked hyperesthesia of the intestine or painful spasm of the colon. Food rich in vegetable detritus—green vegetables, stewed fruits, bread made from whole wheat, etc.—has sometimes been recommended, but in many cases this will not be tolerated, and it becomes necessary to prescribe a regimen that favors constipation while it lessens the irritation of the digestive mucous membrane. Enemata of oil are often useful, especially when combined with large enemata at low pressure. Belladonna is frequently successful, soothing pain and antagonizing the tendency to spasm. More rarely recourse may be had to opium and its derivatives. Hot local applications and hot baths have a useful sedative effect. Prolonged baths and large hot enemata form the basis of treatment at certain health resorts. It is often of advantage to administer sedatives and employ hydrotherapy for the effect on the general neurosis. Often the patients are debilitated and emaciated, and it is necessary to improve the nutrition and at the same time to prescribe a regimen more appropriate to the state of the digestive canal. Dysenteriform attacks should be treated with enemata of a weak solution of silver nitrate, and hemorrhage by preparations of hamamelis and large enemata at a temperature of 113 F.

## MARINE-HOSPITAL NOTES.

THE REEDY ISLAND QUARANTINE STATION was seriously damaged on September 22 by the steamship *Falladon Hall*, which ran into the signal tower of the station. Damages estimated at $15,000.

THE MARINE HOSPITAL established this spring at Dutch Harbor, Alaska, for the care of sick and disabled seamen, will be closed for the winter, as all communication with that point is discontinued on account of ice. It will be opened again in the spring as soon as commercial communication can be had.

### PLAGUE SITUATION IN GLASGOW.

A report from P. A. Surgeon Thomas, Sept. 18, 1900, records seven new cases, with two deaths, leaving twenty-one cases then under treatment. The new cases originated in old foci. One female employee at the hospital had a mild attack after being inoculated with Yersin's serum. Haffkine's prophylactic has not been used because of the reaction which follows. Under the use of Yersin's serum there has been great uniformity of symptoms, namely, slight soreness for a day or two and, at the end of eight days, usually some urticaria and, less commonly, joint pain. A local dermatitis has probably been due to the disinfectant used on the arm.

### NO YELLOW FEVER THIS YEAR.

There has been no yellow fever in the United States this season, which has now so far advanced as to give assurance against an epidemic. It is a cause for special congratulation, particularly as it has prevailed in greater or less degree each of the last three preceding summers and falls. The chief points of danger to the United States have been Havana and Vera Cruz. The smaller cities on the Pacific Coast of Central America are many of them in wretched sanitary condition, and some of them are foci of yellow fever; and as these Pacific Coast ports are annually coming into closer commercial relations with the Atlantic ports, their importance from an epidemiological standpoint becomes magnified. It is gratifying to know that Guayaquil, in Equador, which has heretofore been notably afflicted with a pernicious fever, is being sewered and drained under an American civil engineer. There have been a few cases of yellow fever in one or two of the Central American fruit ports, but no epidemic. There have been a few cases of yellow fever at Tampico, Mexico, and also Merida, which is in close communication with its seaport, Progreso. While the number of infected places has been in a measure limited, in the beginning, of course, it was impossible to say how many there would be, and protective measures were taken early by the Marine-Hospital Service with regard to all yellow fever suspected seaports. Its operations may be considered to have begun in the winter, when Acting Assistant-Surgeon Hodgson was sent on a tour embracing all the Pacific and Atlantic Coast towns of Central America. His reports, showing the conditions, have been printed in the public health reports. At the beginning of the quarantine season seven acting assistant-surgeons were appointed in as many cities on the Atlantic Coast of Central America at what was termed the fruit ports, to put in operation measures which would enable fruit vessels to be admitted without detention at quarantine at this end (which detention is ruinous to their cargoes), even should a case or two of yellow fever be discovered at the port subsequent to their departure. These fruit port regulations have been rigidly enforced. At Vera Cruz an acting assistant-surgeon of the Marine-Hospital Service was detailed in the office of the United States consul and directed to sign bills of health with the consul. He also kept track of people who left Vera Cruz for the United States overland, and on the Texas border of Mexico, at three points, namely, Eagle Pass, Laredo and El Paso, officers of the Marine-Hospital Service have been and are still stationed to detect any passengers arriving from an infected area and to hold any such a sufficient length of time to cover the incubation period of the disease. Each station is provided with a detention camp and the records of the officers show that a number of persons were thus detained and held. In Cuba there has been no serious outbreak of yellow fever excepting in Havana. Here the Marine-Hospital Service has had a large force of officers and employees, with practically three establishments: one the quarantine station proper at Mariel, some twenty odd miles from Havana, for the reception of infected vessels; another, the disinfecting steamer *Sanator*, for the disinfection of ships leaving for the United States, and the third, a shore plant for the disinfection of baggage of passengers leaving, supplementary to the work of the *Sanator*. All are under the charge of an officer of the Marine-Hospital Service, who, by executive order, has been designated as chief quarantine officer of the Island of Cuba, and is detailed on the staff of General Wood, thus insuring harmony of action between the island military authority and the Marine-Hospital Service. The regulations have required all baggage from Cuba labeled either "inspected" or "disinfected," and since the outbreak of yellow fever in Havana all baggage from that port has been, and is still being, disinfected. The *Sanator*, a description of which was published in THE JOURNAL, under date of May 26, 1900, has proved a very efficient vessel. It is the finest vessel of its kind afloat.

# Therapeutics.

### Castor-Oil Made Palatable.

℞ Saccharin ..... gr. xii | 75
Olei gaultheriæ ..... m. xx | 1 33
Alcoholis ..... ʒiv | 16
Olei ricini ..... Oi | 512

M. Sig. One tablespoonful at bedtime.

The addition of saccharin, aromatic oil and alcohol is of use in rendering cod-liver oil palatable —*Canada Lancet.*

### Creolin in Intestinal Fermentation.

℞ Creolin ..... ʒiss | 6
Alcoholis diluti ..... m. xv | 1
Ext. glycyrrhizæ
Pulv. glycyrrhizæ, āā ..... ʒiss | 6
Gum tragacanthæ ..... gr. xv | 1

M. Ft. pilulæ No. 100. Sig. One pill three times a day.
—*Ther. Gazette.*

Creolin is a dark alkaline fluid derived from coal-tar. It is an antiseptic devoid of irritating properties and is beneficial in treatment of many skin affections. David Walsh, in the *Therapist,* recommends it in the treatment of eczema:

℞ Creolin ..... ʒi | 4
Aquæ destil. ..... Oi | 512

M. Sig. Sponge the parts well two or three times a day, then apply the following dusting powder:

℞ Europhen ..... gr. xxx | 2
Zinci oxidi ..... ʒii | 8
Amyli ..... ℥i | 32

### Chronic Eczema.

In chronic eczema Walsh uses the following ointment:

℞ Creolin ..... ʒss | 2
Hydrarg. ammoniati ..... gr. x | 66
Vaselini ..... ℥i | 32

M. Sig. Rub well into the dried patches night and morning.

### Eczema of the Upper Lip.

℞ Thiol ..... gr. vii | 5
Acidi borici ..... gr. lxxv | 5
Menthol ..... gr. ½ | 03
Vaselini ..... ℥i | 32

M. Sig. Apply morning and night.

Or,

℞ Hydrargyri oxidi flavi ..... gr. x | 66
Vaselini ..... ʒvi | 24

M. Sig. At night wash the inflamed parts with a hot boric-acid solution, then touch them with spirits of camphor and apply the ointment.

During the day apply the following:

℞ Resorcin ..... gr. iii | 2
Acidi salicylici ..... gr. iv | 25
Zinci oxidi ..... gr. xlv | 3
Lanolini ..... ʒiss | 6
Vaselini ..... ʒiii | 12

M. Sig. Apply to the lip in the morning after cleansing with hot water. —Brocq.

Thiol is a product of hydrocarbons obtained in a similar manner to ichthyol. It is a brownish-black powder, soluble in water and alcohol, and is used extensively in the form of an ointment in the treatment of various skin diseases, and can be substituted for ichthyol.

### For Recent Rheumatic Neuralgias.

℞ Phenacetini ..... ʒi | 4
Salol ..... gr. xl | 2 66
Caffeinæ citratæ ..... gr. v | 33

M. Ft. cachets No. x. Sig. One every four or five hours.
—Domanski: *Zeo Manual of Ther.*

### Typhoid Fever.

℞ Acidi carbolici ..... mx | 66
Syr. aurantii ..... ℥ss | 16
Aquæ destil., q. s. ad ..... ℥ii | 64

M. Sig. One teaspoonful every two hours. —M. A. Davis.

### Intestinal Antiseptic.

℞ Ichthoform ..... ʒiiss | 10

Ft. capsulæ No. xxx. Sig. One or two capsules three times a day.

Wilcox, in *Jour. Med. Science,* notes the study of the above preparation by Rabon and Galli-Valerio. It is a combination of ichthyol and formaldehyde. Experiments have shown it to hinder the development of bacterium coli, bacillus typhosus, bacillus icteroides, bacillus pyocyaneus and staphylococcus pyogenes aureus. It may be administered in doses of 30 to 45 grains per day.

### Surgical Shock.

℞ Digitalin ..... gr. 1/3 | 02
Strychninæ arsenatis ..... gr. i | 06
Nuclein ..... gr. lx | 4
Atropinæ sulphatis ..... gr. 1/10 | 006
Syrupi tolutani ..... ℥iv | 128

M. Sig. One teaspoonful repeated in an hour or two as necessary.

Martin, in the *Medicus,* states that he has obtained excellent results from the use of the above prescription. In connection with this treatment he uses hot applications to the feet and around the body and administers hot coffee freely.

Tests prove that any other portion of the gastrointestinal tract will absorb strychnin more rapidly than the stomach.
—*Med. Sum.*

### Treatment of Hiccough.

℞ Sodii bromidi
Potassii bromidi, āā ..... ʒi | 4
Ammonii bromidi ..... ʒss | 2
Syrupi simplicis, q. s. ad ..... ℥iv | 128

M. Sig. One tablespoonful every hour until relieved.

H. Klein, of Chicago, states that he was successful in checking the hiccough in a patient, which had continued for four days, by the administration of two doses of the above preparation.

### Traction of the Tongue in Hiccough.

J. Noir, in *British Med. Journal,* states that he has had success in treatment of hiccough by means of Laborde's method of applying vigorous traction to the tongue. In one case of six hours' duration, traction on the tongue for one and a half minutes arrested the trouble. He also reports another case of six days' duration in which a cure was effected in two minutes by the same method. —*Canadian Pract. and Review.*

### Treatment of Obesity.

The *Canada Lancet* gives an outline of von Hosslin's treatment of obesity:

1. Nourish the patient with a purely albumin diet.
2. Increase metabolism by means of hydrotherapy, in the form of cold applications and sweat baths.
3. Administer thyroid extract.
4. Increase oxidation by means of bodily exercise.

Von Hosslin insists on carrying out the above lines of treatment in detail and reports that the omission of any part of it is likely to cause increase in the patient's weight.—*Med. Age.*

### Milk Leg—Phlegmasia Dolens.

℞ Ext. hamamelidis fluidi ..... ℥i | 32
Elixiris simplicis
Syrupi simplicis, āā ..... ℥ss | 16

M. Sig. One to two teaspoonfuls three or four times a day.
—Preston: *Dominion Med. Monthly.*

Or,

℞ Ext. belladonnæ fluidi ..... ʒi | 4
Tinct. opii ..... ℥i | 32
Tinct. iodi ..... ʒi | 4
Olei olivæ ..... ℥viii | 256

M. Sig. Apply to the leg as warmly as can be borne and bandage. —*Smith.*

### Ovarian Neuralgia.

℞ Ext. belladonnæ ..... gr. iv | 25
Ext. stramonii ..... gr. v | 30
Lactophenin ..... ʒiss | 6

M. Ft. pilulæ No. xx. Sig. One pill three times a day.
—C. S. Martin.

**Acute Bronchitis.**

| | | | |
|---|---|---|---|
| R. | Vini ipecacuanhæ | | |
| | Vini antimonii, āā | ℥ii | 8 |
| | Glycerini | ℥iv | 16 |
| | Sol. ammoniæ acetatis | ℥i | 32 |
| | Aquæ, q. s. ad | ℥iii | 96 |

M. Sig. One teaspoonful every three or four hours.

—*Med. Record.*

**Rheumatic Joints.**

| | | | |
|---|---|---|---|
| R. | Acidi salicylici | ℥ss | 16 |
| | Olei terebinthinæ | ℥ss | 16 |
| | Lanolini | ℥i | 32 |
| | Adipis, q. s. ad | ℥iii | 96 |

M. Spread on lint and apply, cover with oil silk and soft bandage. —*Goillard's Med. Journal.*

**Arthralgia (Rheumatic Pains in Joints).**

| | | | |
|---|---|---|---|
| R. | Etheris | | |
| | Alcoholis | | |
| | Methyl salicylatis, āā | ℥i | 32 |
| | Linimenti saponis, q. s. ad | Oi | 512 |

M. Sig. As a liniment to be rubbed thoroughly into the joints.

Methyl salicylate is the active principle of wintergreen, of which oil of gaultheria contains 90 per cent.

—Encyclopedia of Med. and Surgery.

**Gonorrheal Epididymitis.**

| | | | |
|---|---|---|---|
| R. | Sodii salicylatis | ℥ii | 8 |
| | Codeinæ sulphatis | gr. x | 66 |
| | Aquæ menthæ piperitæ | ℥ii | 64 |

M. Sig. One teaspoonful every three hours.

—*Interstate Med. Journal.*

**Mastitis.**

*With Threatened Asbcess of Mammary Gland.*

The *Annals of Gynecology* recommends the following:

| | | | |
|---|---|---|---|
| R. | Tinct. phytolaccæ dec | ℥ss | 16 |
| | Aquæ | Oi | 512 |

M. Sig. To be used as a dressing.

The water should be warmed before applied.

—*Med. Summary.*

**To Prevent Abortion.**

| | | | |
|---|---|---|---|
| R. | Ext. hydrastis fluidi | | |
| | Ext. hamamelidis flu. | | |
| | Ext. virburni prunifolii flu, āā | ℥i | 32 |
| | Tinct. opii | ℥iss | 6 |

M. Sig. One and a half teaspoonful in half glass of water three times a day. Bossi: *Med. Sum.*

**Vermifuge Enema—Threadworms.**

| | | | |
|---|---|---|---|
| R. | Ext. quassiæ fluidi | ℥iss | 48 |
| | Aquæ | ℥iiss | 80 |

M. Sig. One tablespoonful with an equal quantity of warm water as an enema, to be retained as long as possible.

—Gould and Pyle.

**Emetic for Children.**

| | | | |
|---|---|---|---|
| R. | Pulv. ipecacuanhæ | gr. xx | 1 33 |
| | Aquæ (boiling) | ℥v | 20 |

Pour on and strain and add:

| | | | |
|---|---|---|---|
| | Honey of squills | ℥ss | 16 |

Sig. Give one teaspoonful every ten minutes until emesis is produced. —Gould and Pyle.

**Pulmonary Emphysema.**

| | | | |
|---|---|---|---|
| R. | Potassii iodidi | ℥i | 4 |
| | Aquæ, q. s. ad | ℥ii | 64 |

M. Sig. One teaspoonful after each meal in water, avoiding starches.

Give the above for twenty days in each month and during the remaining ten days the following:

| | | | |
|---|---|---|---|
| R. | Sodii arsenatis | ℥ss | 2 |
| | Aquæ, q. s. ad | ℥ii | 64 |

M. Sig. One teaspoonful after each meal.

And every eighth day give gr. iss of aloes with the meal; light diet, plenty of milk, no alcohol nor tobacco.

—*Jour. de Méd de Paris.*

**Arthritis.**

| | | | |
|---|---|---|---|
| R. | Extracti hyoscyami | gr. xv | 1 |
| | Iodoformi | gr. xxx | 2 |
| | Sodii salicylatis | ℥iss | 6 |
| | Petrolati | ℥v | 20 |

M. Sig. As an external application. —*Therapist.*

**Erysipelas.**

| | | | |
|---|---|---|---|
| R. | Iodoformi | ℥i | 32 |
| | Creolin | ℥ss | 16 |
| | Lanolini | | |
| | Vaselini, āā | ℥i | 32 |

M. Ft. unguentum. Sig. Apply locally.

Mracek: *Texas Med. Jour.*

**Palatable Effervescent Quinin.**

| | | | |
|---|---|---|---|
| R. | Quininæ sulphatis | ℥i | 4 |
| | Acidi citrici | ℥iiss | 10 |
| | Syrupi aurantii corticis | m. xv | 1 |
| | Syrupi simplicis | m. xv | 1 |
| | Aquæ destil, q. s. ad | ℥v | 20 |

M. Sig. Add ten or twenty drops to two ounces of water containing five or six grains of sodium bicarbonate.

Ten drops of the mixture contains about one grain of quinin.

—*Therapist.*

# Medicolegal.

**Temporary Mental Aberration No Defense.**—In the case of Castlin vs. State, in which it affirms a conviction of murder, the Court of Criminal Appeals of Texas says that it knows of no such defense as temporary mental aberration, as produced by adequate causes and arising from surrounding circumstances. It says that if the party accused of the crime was insane, and did not know the nature and quality of his act, then he was not amenable to punishment. If he was not insane, and did know the nature and quality of the act, and did know right from wrong, at the time of the commission of the offense, then he would be amenable to the law.

**Contradiction by Certificate.**—In Smith vs. Standard Life and Accident Insurance Company of Detroit, an action brought to recover on an accident insurance policy, the Supreme Court of Minnesota holds that, in view of the testimony of an attending physician to the effect that the death of the insured was the result of an injury, it was error to exclude from the consideration of the jury a certificate of the cause of such death, signed by that physician, which, to some extent, contradicted his oral testimony, a proper foundation for the introduction of the certificate having been laid.

**Notification of Imminence of Death Not Needed.**—To render admissible in evidence an ante-mortem statement as to the cause of death, made by a person soon after receiving an injury from which he died, the Supreme Court of Idaho holds, in State vs. Yee Wee, that it is not necessary that it be first shown that the attending physician informed the maker of the statement before he made it that he was going to die. To make such a statement admissible it must be shown that it was made under the belief that death was impending, the imminence of death being apparent at the time. But it makes no difference, the court says, what influence induces the person, whose death is apparently imminent, to believe that he is about to die—whether from his own condition and feelings, or the advice of a physician. His statement as to the cause which brings about his death, made under such circumstances, is admissible in evidence.

**Plea for a Medical Defense Union in the United States**—The medical profession has many difficulties with which to contend, and one that undoubtedly weighs heavily upon its members is the disadvantages under which they labor in defending malpractice suits. An action of this description brought against a physician does not only affect him personally, but upon his victory or defeat depend to a certain extent the good name and financial position of his medical brethren at large. This being so, it is reasonable to expect that every effort will be put forth by the accused to win his suit, as he is as a matter

of fact fighting in the interests of the entire medical profession. But unfortunately it often happens that the money necessary to employ the best measures to insure success is lacking, and that consequently irreparable injury is done to physicians throughout the country. Dr. Donald B. Pritchard, writing in the *St. Paul Medical Journal*, July, proposes that a medical defense union, formed on the lines of that now in existence in England, should be established in this country. His idea is to organize a mutual association, the membership of which should be confined to those who belong to the state or some properly organized medical society. In order that the organization might be of the highest standing, it would not be proper to defend one guilty of gross malpractice. That this might be accomplished, every case should be submitted to a standing committee, who after a thorough examination would decide whether or not it would be proper for the association to defend. If the decision is not satisfactory to the member, then a board of arbitration should decide the matter. When the association undertakes the defense, the member involved should be pledged to be absolutely guided by it in the conduct of the case, and that it should not pay any part of the verdict, simply incurring liability for all expenses of the trial. Dr. Pritchard says that he has communicated with a number of well-known lawyers, and that they all say that there is no legal bar to such an association, and that there is no more likelihood of juries being adversely influenced than in the case of any other corporation. The suggestion is at least worthy of consideration, and the good work done by the English Medical Defense Union should act as encouragement for the establishment of a similar organization in this country.—*New York Med. Record*, Sept. 15.

[Would it not be more economical, and far better, to have each state society take up this as one of its duties to its members than to organize an association especially for the purpose as suggested above? ED.]

**Opinion of Medical Expert as to Cause of Death.**—The Supreme Court of South Carolina says, in the case of State vs. Foote, that it is very common practice to allow a medical expert to state his opinion as to the cause of death, based on his own personal observation. And it holds that, while it is quite proper that the jury, as far as practicable, should be informed as to the facts or circumstances on which the opinion is based, it is not error to permit such expert opinion when it appears to be based on the witness' personal observation. If the objecting party desires, he may, on cross-examination, it explains, develop all the circumstances inducing the opinion which are capable of reproduction to the jury, and thus test the value of the opinion. But a hypothetical statement of facts as the basis for the opinion of a medical expert as to the cause of death, the court holds, is not necessary when the opinion is based on the personal observation or examination of the witness. Then, exception was taken, in this case, a prosecution for murder, to the reason which the trial judge assigned for refusing to grant a new trial for insufficiency of evidence, namely, "that, if the doctor had stated that the death was not caused by the wound, the jury had the right to disregard the testimony and find that the wound caused the death of the deceased." Still this, the court holds, did not constitute error of law. A circuit judge, it adds, is not bound to set aside a verdict, even if the jury in reaching its conclusion may disregard the opinion of an expert.

**Witness Not Allowed to Exhibit His Own Injury.**—In the case of the Grand Lodge, Brotherhood of Railroad Trainmen, vs. Randolph, certain medical witnesses for Randolph testified, in effect, that a fractured leg never gets well, and that a person who has suffered such a fracture will be disabled from performing train service on railroads. The fraternal benefit society named sought to dispute this testimony by the experience of one of its witnesses, and by the exhibition of his leg to the jury. This witness was permitted to testify that his ankle had been crushed and injured as seriously as Randolph's leg had been, and that it had so far healed that he was still able to perform his duties in the train service of the railroad company. But he was not allowed to exhibit his injured ankle to the jury. In this the Supreme Court of Illinois holds that there was no error. It says that it is obvious that the point at issue was the extent of the plaintiff's (Randolph's), and not of the witness', injuries, and that to have permitted the close scrutiny requested into the nature and extent of the injury to the witness' ankle would have raised a collateral issue, and diverted the minds of the jury from the issues submitted to them. And the supreme court affirms a judgment holding that Randolph was permanently disabled by being thrown from a locomotive engine and having the bones of his right leg broken, so as to be entitled to recover the amount stipulated in the constitution of the society for a total permanent disability.

**County Association Entitled to Fines.**—Section 153 of chapter 398 of the laws of New York of 1895 provides that "when any prosecution under this article (for practicing medicine without lawful registration as a physician) is made on the complaint of any incorporated medical society of the state, or any county medical society entitled to representation in a state society, the fines, when collected, shall be paid to the society making the complaint," etc. In the case of the New York County Medical Association vs. the City of New York, the right of the former to such a fine, which had been collected in a case where it had made complaint, was tested. The association showed that it had been since 1890 a duly incorporated society of the state of New York, entitled to representation in the New York State Medical Association, which was incorporated in 1884, and that the state association is the accredited society in the national body of physicians known as THE AMERICAN MEDICAL ASSOCIATION. Such being the case, the Supreme Court of New York, New York County, holds that the New York County Medical Association meets all the requirements of the act of 1895 above mentioned, and that there appears to be no solid legal reason why it should be excluded from the benefit of its provisions. "Association" and "society," the court holds, are convertible terms. To this it adds that the statute was not enacted for the benefit of any particular corporation, but for "any incorporated medical society" entitled to representation in the state society, and that it was passed to protect the public from illegal medical practitioners, and that the more numerous the informers and rigid the prosecution the better for the public and the medical profession. Nor does the court yield assent to the argument that the act was for the exclusive benefit of three societies—the regular, homeopathic and eclectic—because they were named in certain prior acts, and possess certain rights which the New York County Medical Association does not possess.

# Societies.

## Coming Meetings.

New York State Medical Association, New York City, Oct. 16-18.

American Public Health Association, Indianapolis, Ind., Oct. 22-26.

Medical Society of Virginia, Charlottesville, Oct. 23.

Southern Surgical and Gynecological Association, Atlanta, Ga., Nov. 13-15.

Oklahoma Territory Medical Society, Oklahoma City, Nov. 15.

The Tri-State Medical Association of Mississippi, Arkansas and Tennessee, Memphis, Nov. 13-15.

THE SENECA FALLS (N. Y.) MEDICAL ASSOCIATION was organized September 26, with the following officers: Dr. Frank M. Severson, president; Dr. Frederick W. Lester, vice-president; Dr. Hubert Schoonmaker, secretary and treasurer.

THE MALDEN (Mass.) MEDICAL SOCIETY, at its annual meeting, September 18, elected the following officers: Dr. Charles E. Prior, president; Dr. Charles D. McCarthy, vice-president; Dr. Frank W. Plummer, treasurer, and Dr. William J. Weeks, secretary.

THE ABERDEEN (S. D.) DISTRICT MEDICAL SOCIETY, at its annual meeting at Aberdeen, September 22, elected the following officers for the ensuing year: Dr. William Edwards, Bowdle, president; Dr. Frank Miller, Aberdeen, vice-president; Dr. George E. Countryman, Aberdeen, secretary and treasurer.

THE BOURBON COUNTY (Ky.) MEDICAL SOCIETY was organized in Paris, September 20, and the following officers were elected: Dr. Washington Fithian, Paris, president; Dr. William V. Huffman, Millersburg, vice-president; Dr. Frank L. Lapsley, Paris, secretary, and Dr. Silas Evans, Paris, treasurer.

THE BALTIMORE COUNTY (Md.) MEDICAL ASSOCIATION held its regular meeting September 20 at Towson. Dr. William S. Gardner, Baltimore, read a paper on "Uterine Hemorrhage," and cases were reported by Drs. William P. E. Wyse, Pikesville, Charles G. Hill and L. Gibbons Smart, Baltimore; H. Burton Stevenson, Rider; R. Percy Smith, Sunny Brook, and Jackson Piper, Baltimore.

THE FRANKLIN COUNTY (Vt.) MEDICAL SOCIETY held its semi-annual session at Swanton, September 27. An address was delivered by the vice-president, Dr. Edmund T. Brown, Montgomery Center. Dr. Clarence E. Allen, Swanton, read a paper on "Gonorrhea, Its Influence on the Uterus and Its Appendages." Papers were also read by Prof. John B. Wheeler, Burlington, and Dr. Harlow E. Dunton, Swanton.

THE ST. JOSEPH COUNTY (Ind.) MEDICAL SOCIETY met in South Bend, September 25. Dr. John B. Berteling, South Bend, made a report of the meeting of the Kankakee Valley District Medical Society at Hammond; Dr. George W. Van Benschoten, South Bend, read a paper on "The Relation of General Health to the Eye and Its Diseases," and Drs. Fred P. Eastman, Charles Stoltz and others reported cases.

THE NORTH CENTRAL OHIO MEDICAL SOCIETY held its seventy-sixth quarterly session at Mansfield, September 28. Papers were read by Dr. Feorus F. Lawrence, Columbus, on "Pelvic Suppuration"; Dr. James B. Herrick, Chicago, on "Some Points in the Diagnosis of Gall-Stones"; Dr. William D. Hamilton, Columbus, on "The Dangers of Delay in Cases Having Surgical Possibilities"; Dr. Albert F. Hyde, Shelby, "Brief Talks on Various Subjects," and Dr. Adam H. McCullough, Mansfield, on "Hay Fever."

THE GOLDEN BELT (Kan.) MEDICAL SOCIETY met at Enterprise, October 4, President Dr. James R. Crawford, Salina, in the chair. Papers were read by Dr. Wilber E. Fowler, Brookville, on "A Scientific Poultice;" Dr. Joseph F. Brewer, Minneapolis, on "Etiology and Treatment of Some of the Diseases of the Stomach;" Dr. William Frick, Kansas City, Mo., "More Complications of Gonorrhea"; Dr. Henry M. O'Donnell, Ellsworth, "X-Ray and Its Advantages in Country Practice," and Dr. Charles Hewitt, Wakefield, on "Practice of Medicine in an Early Day." Clinical cases were also reported by other members of the society.

THE SARATOGA COUNTY (N. Y.) MEDICAL ASSOCIATION was organized September 28 at Saratoga Springs, as a branch of the New York State Medical Association. Dr. Tabor B. Reynolds, Saratoga Springs, was made temporary chairman and Dr. Fred J. Ressegine, Saratoga Springs, temporary secretary. Dr. Frederick Holme Wiggin, New York City, stated the objects of the New York State Medical Association and the benefits to be derived from affiliated county organizations. The following officers were elected: Dr. Frank A. Sherman, Ballston Spa, president; Dr. George F. Comstock, Saratoga Springs, vice-president; Dr. John F. Humphrey, Saratoga Springs, secretary, and Dr. William E. Swan, Saratoga Springs, treasurer. It was decided to adopt the code of ethics of THE AMERICAN MEDICAL ASSOCIATION and to request the council of the State Medical Association to accept the Saratoga County Association as an affiliated branch.

THE IDAHO STATE MEDICAL SOCIETY held its eighth annual meeting at Boisé October 4 and 5, conjointly with the autumnal semi-annual meeting of the Southern Idaho Medical Association. President Dr. Ed E. Maxey, Caldwell, in the chair. Papers were presented by Dr. Hubert A. Castle, Pocatello, on "Inter-utero-placentary Hemorrhage;" Dr. Lucien P. McCalla, Boisé, on "Hydraulic Pressure a Means to Open the Common Duct, Which Remained Closed After Removal of Impacted Gall-Stone;" Dr. R. C. Coffey, Portland, Ore., on "A Method of Retaining a Fixed Dressing for Fracture of the Humerus;" Dr. C. E. Worthington, Mullan, on "Reciprocity Between State Medical Examining and Licensing Boards;" Dr. Harry D. Niles, Salt Lake City, Utah, on "The General Practitioner and the Specialist;" Hon. E. J. Dockery, Boisé, on "Physicians as Expert Witnesses;" Dr. Edwin F. Guyon, Montpelier, on "The Proper Method of Using the Sound in Cases of Urethral Stricture;" Dr. Carl Schulin, Helena, Mont., on "Homatropin in the Refraction Room;" Dr. Warren D. Springer, Boisé, on "Position in After-Treatment in Abdominal Operations"; Dr. Michael A. Hughes, Salt Lake City, Utah, "Report of Some Cases;" Dr. Alexander Hunter, Kendrick, "Report of a Case of Tetany," and Dr. Ed E. Maxey, Caldwell, retiring president, delivered an address on "The Clinical Importance of Examining the Blood."

THE ASSOCIATION OF ASSISTANT PHYSICIANS OF HOSPITALS FOR THE INSANE held its eighth annual session at the Central Indiana Hospital for the Insane, Indianapolis, September 26, 27 and 28. Papers were read by Dr. W. A. McCorn, on "Genesis of Hallucinations"; Dr. George Boody, Independence, Ia., on 'Katatonia"; Dr. Fred L. Pettijohn, Indianapolis, on "Asexualization as a Means of Prevention"; Dr. Vaclav Podstata, Hospital, Ill., and August F. Lemke, Chicago, on "Delirium in its Various Forms, and Special Reference to the Differential Diagnosis and Prognosis"; Dr. Emmet F. Enos, Hospital, Ill., on "A Case of Punctured Wound of the Brain"; Dr. William MacLake, Ann Arbor, Mich., "Report of a Case of Diabetes, with Remarks on Treatment"; Dr. John B. Briggs, Jr., Baltimore, on "The Systematic Relations of Bacteria and the Infectious Diseases"; Dr. Theophile Klingman, Ann Arbor, Mich., on "The Pathology of Incipient Insanity"; Dr. Albert M. Barrett, Independence, Ia., on "Pathology," and Dr. Irwin H. Neff, Pontiac, Mich., on "The Use of Hypnotics and Sedatives in the Insane." The last day of the session was occupied by the discussion of the developments in the clinical study of psychiatry. The following officers were elected: Dr. Fred L. Pettijohn, Indianapolis, president; Dr. Vaclav Podstata, Hospital, Ill., vice-president; and Dr. Irwin H. Neff, Pontiac, Mich., secretary and treasurer.

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## San Francisco County Medical Society.

*Regular Monthly Meeting, Sept. 18, 1900.*

President Elmer E. Kelly, M.D., in the chair.

### ETIOLOGY AND SYMPTOMATOLOGY OF RICKETS.

DR. WILLIAM FITCH CHENEY presented a paper on this subject. It affects not only nutrition of bone, but of all the soft tissues of the body. The most important causative factor is deficiency of fat in the food. A loss of proteids is also a causative factor, for if fat and proteids are both deficient, rickets is more apt to occur than if fat alone is deficient. The probability of the disease is greater also if an excess of carbohydrates is present with a deficiency of fat, and it is for this reason that rickets is so often seen to occur in infants fed on condensed milk. Another important factor is poor hygienic surroundings.

The sweating of the head so often seen in infants while sleeping at night is a symptom of great importance, and should always make the practitioner suspicious of this disease. Restlessness at night, constipation and delayed or irregular dentition are also important symptoms. The enlargement of the epiphyses of the long bones, the rosary, which is very prominent in some rachitic children, should be looked for. The delay in closure of the anterior fontanelle and the square box shaped head are evidences of the development of rickets. The children usually complain of tenderness of the whole body, dislike being carried, and sometimes cry out in being lifted or handled. Flabby muscles and ligaments are frequently overlooked, but are often an evidence of rickets in children slow in beginning to walk. The protuberant abdomen is seen early. There is a tendency to gastrointestinal bronchopulmonary catarrh. There are many symptoms referable to the nervous system. Rickets is one of the great predisposing causes to convulsions, and should always be looked for. Laryngismus stridulus is usually due to this affection, and the tendency on the part of an infant to hold its breath, even until it is black

in the face, usually occurs in rachitic children. By these symptoms one can recognize this disease before deformities of bone occur, when it may be possible to prevent them.

THE ETIOLOGY AND DEVELOPMENT OF DEFORMITIES OF THE SKELETON IN RICKETS.

DR. H. M. SHERMAN confined his remarks to a consideration of those types of the disease ordinarily seen in California, excluding the severer forms sometimes seen in Eastern and European clinics. That moderately severe cases are seen here is evidenced from the photographs which he presented. Craniotabes is very rare here. It is due to deficient ossification, plus the pressure of the head on the pillow or on the bed; gravity then is one cause of the thin bone and the flattened occiput, the skull not being strong enough to bear its own weight, and that of the contained brain. Deformities of the skull are common; most frequent is the somewhat flattened vertex, with the depression at the anterior fontanelle; next is the flattened occiput, due to prolonged recumbency. In cases of cranial asymmetry he suspects rachitis. Deformities of the thorax are due to muscular force on one side and atmospheric pressure on the other, together with gravity. If the child has rickets early and spends much time lying on its back it would get the broadening of the thorax and the lessening of its depth. If the rickets came a little later, when the child was already sitting or standing, the atmospheric pressure would flatten the ribs anterior to the angle, and by so doing would throw the anterior end forward, carrying the costal cartilages. Whether the sternum were prominent or depressed would depend on the strength of the costal cartilages. If strong enough, the sternum would be carried forward with them; if weak, the sternum would be depressed by atmospheric pressure. The transthoracic groove—Harrison's groove—marks on the outside the attachment of the diaphragm on the inside. As this muscle pulls, the resistance offered by the ribs is less than that offered by the distended abdomen, and instead of the abdominal contents being forced down, the ribs are drawn in; the lowest ribs are however, tilted outward by the distended abdomen, and this gives them their flare, and makes the lower boundary of the Harrison groove. Ordinarily the deformities of the thorax are symmetrical. He regards scoliosis as a deformity of the rachitic thorax. He has never seen a scoliotic that did not show obvious marks of a rachitis, so that the real cause of the deformity of youth and of adolescence must be looked for in the dietary of infancy. It is not common to see deformities of the arms or forearms apart from enlargements of the wrist epiphyses, and some slight increase in the natural curves of the bone. The deformities of the trunk and upper extremities are not of great surgical interest, as they usually do not require correction by surgical methods. The deformities of the lower limbs often require correction, because they are frequently extreme, and because they interfere with the function of the part.

Coxa vara, or the bending downward of the neck of the femur, is probably often a manifestation of late rickets. The natural curve or spring of the shaft of the femur is frequently increased in rachitic children. If the child has been walking, the body-weight is contributed to the deformity, but it exists in children that have not walked as a result of mechanical action. The curve of the femur may be part of the general curve which reaches from the hip to the foot, the leg bones being curved on about the same radius. This deformity is the common bow-legs. In these cases the knee-joint contributes to the deformity, the relative length of the condyles being disturbed, so that the outer is too long. This increased length is probably because of over-growth of the outer condyle, due to the rachitic congestion of the bone and lack of pressure, for, where the body weight is on such a leg, the force on the convex side of the leg is plainly tensile, and not compressive. Furthermore, the ligaments at the knee in these cases are always lax, so that there is actual separation between the outer femoral condyle, and the outer tibial tuberosity, when the child stands. This condition at the knee is genuvarum. The reverse condition at the knee, or genuvalgum (knock-knees may occur, but it is never part of the general curve, though it may be one of the many deformities. The rachitic child always has a tendency to flat-foot, from structural weakness of muscles and ligaments, but this tendency is increased by the outward curve of the leg bone, their shape tending to transmit an inward thrust to the tarsus, and so to roll it over inward. Serious cases of rigid flat-foot combined with slight excurvation of the leg bones in their lower portion are not uncommon. The author concludes that: 1. Structural weakness in the bone is the essential cause of the skeletal deformities in rickets. 2. The active deforming force is either muscular action, or too great superincumbent weight, or pressure by some external object, or gravity. 3. The bone yields always in the direction of the greater force, and this direction is often determined by the natural shape of the bone, the tendency being to increase normal curves. 4. In some cases where there is no other reinforcing bone, there is a hypertrophy of the deformed bone, to antagonize the deforming force. 5. Symmetrical deformities are characterisitc of rachitis, the similarity of structure of the two limbs, and the similarity of the mechanical conditions in them, tending to produce similar resulting deformities.

TREATMENT OF DEFORMITIES DUE TO RACHITIS.

DR. I. J. HUNKIN presented a paper on the above subject. For deformities of the skull, the ribs and the pelvis surgery offers but little remedy, and these are the forms fortunately rarely seen with us. Under proper care, also, nature proves often fully competent to attend to most of the deformities of the upper extremities, and to a large extent also to the long outward curves of the femora. In the vast majority of cases the surgery of rachitic deformities has relation to changes in the tibia. Surgically, there are three plans of treatment: expectant, mechanical and operative. The expectant method relies largely on the efforts of nature, aided, of course, by the hygienic and medical control of the case. This usually succeeds in mild, and often in medium, degrees of deformity, when the patient is 2 years, and perhaps 3 years of age. The long curves of the femora and humeri are especially amenable to treatment in this manner. The mechanical treatment has two divisions: ambulatory and recumbent. The ambulatory, meaning the attempt to correct the deformity by the wearing of splints and braces during locomotion, is to be condemned. There is no doubt that any of these deformities can be corrected by mechanical applications in the hands of the surgeon in young children, and perhaps in older children, if the patient is kept recumbent during treatment, but even here it is a waste of time and energy. If the child is to be confined to bed during the treatment it is far better that the proper operative procedure should be adopted, the deformity corrected at once, after which simple retentive splints are alone necessary. The patient needs no special care and in six or eight weeks is up and about and in as good condition as he would be in as many months with apparatus alone. There are three operative procedures: osteoclasis, osteotomy and osteoectomy. Osteoclasis is the simplest operation and most generally applicable in the great majority of cases, especially where the deformity involves most of the shaft of the bone, or where the summit of the curve is not close to a joint. The author uses for this purpose of the osteoclast of Grattan. While it is generally taught that the force should be applied at the summit of the greatest concavity, he usually prefers the point of the greatest convexity, believing that he gets earlier reposition, and less danger of twisting the bone before the blow is delivered by the instrument. Osteotomy is performed with the regular osteotome. The leg being supported on a sand-bag, the incision is made with the osteotome, the edge being held perpendicularly to the leg and the division being made by forcing the blade through the soft tissues with the hand, or preferably with a sharp tap of the mallet. When the bone is reached the blade is rotated in the tissues until the cutting edge is across the bone, into which it is driven to the desired depth. No attempt is made to cut through the whole bone, for division of 3/5 of the circumference allows ready reposition of the deformity. The osteotome being removed, the proper correction is made manually. The incision receives no attention, except being covered with a clean pad. The position secured

is maintained with a plaster-of-paris splint. Union is usually prompt and satisfactory. Osteoectomy, or osteostomy, is performed through an open incision and consists in removing a wedge of bone from the apex of the deformity, the base of the wedge being from the convex surface. This wedge is resected with the chisel, or the osteotome, and the mallet. No bone suture is necessary. The periosteum and skin are closed separately and a plaster-of-paris splint applied. The union after all these operations is generally prompt and relapse is very infrequent. For deformities of the shaft at any point, when the apex of the curve is 5 cm. or more from the joint, osteoclasis is the operation par excellence in the great majority of cases. Close to the joint line osteotomy is always to be preferred.

DIAGNOSIS AND TREATMENT OF RACHITIS.

DR. E. G. FRISBIE called attention to the fact that scorbutus and rickets may co-exist, and that the diagnosis of the latter can be made by the absence of the intense pain in the region above the epiphyses, and if teeth are present, by the absence of ulcerative stomatitis. From acute rheumatism rachitis may be differentiated by reason of the less acute pain and absence of any considerable fever and joint swelling; from Pott's disease, by the longer spinal curvature and less rigidity of the spine, although this differentiation may in some cases be very difficult. From osteomalacia the differential diagnosis is impossible, but happily this disease is so rare in this region that it may practically be excluded. The constitutional treatment of rickets should consist of hygienic, dietetic and medicinal measures, Since by far the larger number of rachitic patients are among the poor, it becomes of the first importance to see that the hygienic conditions are improved. The dietetic management is important both as a prophylactic and a curative measure, and in the nursing infant this should begin with attention to the diet of the mother. Artificially-fed infants should be fed on a modified cows' milk. For older children, the author advises an abundance of fresh butter spread upon bread, and the continuance of the use of a larger proportion of milk, as well as beef juice and meat broths.

The medicinal treatment consists of the careful regulation of the bowels and the use of cod-liver oil, which the author considers the most generally useful drug. Phosphorus he also considers beneficial in doses of 1/200 to 1/100 of a grain for children of 2 to 6 years, and smaller doses to younger children. For the anemia accompanying the disease, the syrup of the iodid of iron is the preparation of his choice.

## American Electrotherapeutic Association.

*Tenth Annual Meeting, New York City, September 25-27, 1900.*

Dr. Walter H. White, Boston, in the chair.

ELECTRIC LIGHT AS A THERAPEUTIC AGENT.

DR. CHARLES O. FILES, Portland, Me., said that the electric light acted by impairing the vitality of the bacilli, partly by the action of the light per se, and in part by the incidental generation of ozone. The treatment was preferably given in connection with an arc-light cabinet. In all of the incipient cases of tuberculosis in which he had tried this method, there had been improvement.

DR. WOLFF FREUDENTHAL, New York City, read a paper on "Electric Light; Its Physiological Action and Therapeutic Value in Tuberculosis of the Throat and Lungs." He discussed the evidence at hand concerning the germicidal action of light, and reported several cases in illustration of what might be accomplished by the electric-light treatment.

A REPORT ON THE PRACTICAL VALUE OF CROTTE'S METHOD OF TREATING CONSUMPTION.

DR. EGBERT LEFEVRE, New York City, presented this report. It was founded on a three-months trial of the method in St. Luke's Hospital with the object of fairly testing the claims of the inventor. To that end careful records were kept of both the local and general condition of all the patients taking the treatment both before and after. Not one of the cases in the first stage of the disease showed any abatement of the local process, and in two of these patients the change for the worse was so apparent after two weeks that the treatment was discontinued. Three of this series showed some temporary improvement, but no more than they had exhibited during the stay in the hospital under hygienic and dietetic treatment. A case of tuberculosis of the glands was made so much worse by the irritation set up by the iodin and by the electrical application, that the glands broke down, necessitating an operation. Coincident with this breaking down of the glands there was a rapid increase of the disease in the lungs and the case ran a very rapid course. In the advanced cases the treatment apparently did harm. The treatment consisted in giving the patients static electricity while seated on an insulated stool. In addition to this a towel moistened with a solution of formalin was placed on the chest, and a solution of iodin in spirits of camphor was painted over the chest at the site of the pulmonary disease. When the pathologist of the hospital reported that he was unable to find, after examination of the patient's secretions, any evidence of absorption of either iodin or formalin, Mr. Crotte retorted that he was not competent to carry on such an investigation. To be perfectly fair, Crotte was then allowed to have this part of the work done by his own chemist, but the latter was also unable to find evidence in support of Crotte's contention and boasted claim that these substances were driven into the patient's system by cataphoresis. Crotte's claim having thus fallen to the ground, and the clinical investigation having demonstrated the worthlessness of this method of treatment, it was abandoned .

DR. WILLIAM J. MORTON, New York City, said he had gone to St. Luke's Hospital to find out the Crotte method, and had been unfavorably impressed by what he had seen there. A patient was being treated at the time with static electricity obtained from a modern American machine. On the other side of the room stood a French ebonite plate machine, from which he could elicit no sparks, yet he was informed that this French machine was their main reliance in giving the Crotte treatment, the other machine having "no cataphoric power!" Dr. Morton went on to say that he was not aware that vapors could be introduced into the body by cataphoresis, and if the Crotte method were to receive any further attention from the scientific physician it was essential that a clear understanding should be had of the electrophysics on which it is based. At his suggestion, the association appointed Drs. William J. Morton, Robert Newman and Emil Heuel, New York City, a committee to settle definitely this vital question.

GENERAL WORK OF A GYNECOLOGIST.

DR. FRED H. MORSE, Melrose, Mass., read a paper on the above subject. He said electricity was invaluable in making a diagnosis of deep-seated pus formations, and electrical treatment in his hands had been most satisfactory in cases of metritis, endometritis, subinvolution, displacements, ovarian neuralgia and painful menstruation. He preferred to use large electrodes made of asbestos cloth, and looked on an amperemeter and a good high-tension faradic battery as necessary parts of the office armamentarium of the successful physician.

THE MORTON WAVE CURRENT.

DR. W. B. SNOW, Atlanta, Ga., said it was the only current of very high potential that could be passed through the body with little or no discomfort, and the fact that it penetrates every part of the body gives it a unique position as a therapeutic agent. This current when applied to the human subject produces: 1, a marked lowering of arterial tension; 2, a reduction in the frequency of the heart's action, with an increase in the volume of the pulse; 3, increased oxidation and metabolism; 4, a sense of drowsiness, and 5, a sense of fatigue if the treatment is unduly prolonged. It was most important to repeat the application, in cases of neuralgia before the pain has returned with an degree of severity. For sprains and bruises it is unexcelled.

DR. WILLIAM J. MORTON, New York City, also made some remarks on this current. He believes that it embodies all that is to be obtained from the static machine in current form. The treatment is more agreeable than with the static induced current, it is just as easily localized, and its action is more

widely distributed in the body. It produces marked analgesic effects.

DR. C. R. DICKSON, Toronto, DR. LUCY HALL-BROWN, Brooklyn; DR. MARGARET A. CLEAVES, New York City, and DR. WALTER H. WHITE, Boston, all spoke favorably of the action of this current in neurasthenia, neuralgias, neuritis, rheumatoid arthritis and other diseased conditions.

THE CAUSES OF SOME CASES OF NEURASTHENIA AND THEIR TREATMENT.

DR. FRANCIS B. BISHOP, Washington, D. C., read this paper. As a result of his studies of the urine in cases of neurasthenia he had learned that there was quite commonly a diminution in the urea and an increase in the phosphates. The object of treatment, he reasoned, should be to promote such changes as result in the formation and elimination of a larger quantity of urea. Muscular exercise is good, but as these patients are already fatigued, he selected electricity as the agent best suited for his purpose. The treatment begins with mild galvanization of the brain and spinal cord, and is followed by general faradization and finally by exposure of the whole body to the static breeze by the use of an apparatus which he calls an ozone cage. This last application he finds particularly soothing and pleasant to these patients.

X-RAY PHOTOGRAPHY.

DR. E. R. CORSON, Savannah, Ga., presented a paper on this subject. He insisted that good skiagraphs of bones should give good detail in the bones themselves. He recommends using a coil giving only an 8 or 10-inch spark, and using all the current the X-ray tube can stand. All his negatives are intensified until they are very black and dense.

ELECTRICITY IN BRAIN FAILURES.

DR. D. R. BROWER, Chicago, read a paper on the above subject. He finds that these cases are very often associated with a dilated stomach, and here he strongly advises the daily use of intragastric galvanization, using Einhorn's electrode. In addition he resorts to galvanization of the brain, using a current of one or two milliamperes for two minutes. This is followed by transverse and bulbar galvanization, and lastly by static insulation.

ELECTROTHERAPY OF INSANITY.

DR. ALFRED T. LIVINGSTON, Jamestown, N. Y., described his very favorable experience with the use of electricity in cases of melancholia—a method almost unknown to those who have most to do with insanity. The treatment is founded on the theory that insanity is largely dependent, in the first instance, on circulatory changes in the brain. A current of 10 to 15 milliamperes is used on the lower pair of sympathetic cervical ganglia, one of 8 or 10 milliamperes on the second pair, and one of 5 or 8 milliamperes on the upper pair, the electrodes being carefully slid along so as not to produce a break in the current.

The following officers were elected: President Dr. Ernest Wende, Buffalo; vice-presidents, Dr. Fred H. Morse, Melrose, Mass., and Dr. D. R. Brower, Chicago; secretary, Dr. George E. Bill, Harrisburg; treasurer, Dr. R. J. Nunn, Savannah; chairman of executive committee, Francis B. Bishop, Washington. The next annual meeting will be held in Buffalo, beginning the first Tuesday in September, 1901.

## California Academy of Medicine.

*Monthly Meeting, September 25, 1900.*

ECTOPIC PREGNANCY.

DR. J. HENRY BARBAT exhibited both Fallopian tubes removed from a patient who was taken, twenty-four hours previous to the operation, with severe pain in the abdomen, accompanied by pallor and faintness. She had missed her menses the month before, after having been regular for four years, and had felt that something was wrong with her, as she had some pain in the pelvis, and thought she might be pregnant. A diagnosis of ectopic pregnancy was made and operated on immediately. When the abdomen was opened fully a liter of blood poured out, containing a number of clots. The left tube was lifted out of the belly and found to contain a large quantity of blood, its fimbriated extremity being completely occluded. It was removed, leaving the ovary, which was normal. The right tube was then lifted out and found ruptured near the distal end. It was removed and, on opening it, a fetus of about three weeks was discovered. The left tube contained fluid blood and a decidua which formed a closed sac at both extremities of the tube.

He describes a second case of tubal pregnancy in which the fetus was not more than two weeks old. The menses had been delayed several days, and when they appeared, kept drizzling longer than usual. The patient also noticed a sharp pain in the pelvis on the right side, but otherwise felt perfectly well. A diagnosis of ectopic pregnancy was made and the tube removed, which was not yet ruptured, but was leaking blood from its fimbriated end. A peculiar coincidence is that the patient's sister died a few years ago from ectopic pregnancy.

A CASE OF LEPROSY.

DR. D. W. MONTGOMERY reported a case of a white woman who contracted leprosy in San Francisco. This woman presented herself on Nov. 14, 1899. She was 50 years of age and was suffering from paralysis agitans. Her father still lived and was 80 years of age. Her mother had died three years previously at the age of 75. On coming from Ireland to San Francisco, in 1870, she married an Irishman, who had lived in Ireland, Boston and San Francisco, and nowhere else. He had died in 1882 from hemorrhage of the stomach. Patient said her husband had never had any blotches on his skin. She had had two children and one miscarriage. There was a group of smooth, glistening, firm, prominent tubercles on the left cheek, and there was a tubercle near the vermilion border of the upper lip, to the left of the philtrum. There was one tubercle on the nose tip, and the lobes of the ears were infiltrated and nodular, and there were leucoplasia-like patches on the roof of the mouth. There were tubercles or red maculæ scattered over the skin of the upper and fore arms.

There was no demonstrable enlargement or tenderness of the right ulnar or median nerves, but the left ulnar nerve was slightly enlarged and very sensitive to touch. The skin of the backs of the hands and, to a slight extent, of the left fingers was swollen, smooth, waxy-looking, and had tubercles scattered in it. The sensations of touch and pain were normal in both upper extremities. Both legs were swollen, with red blotches and tubercles in the skin. Microscopic examination was made of the juice squeezed from one of the tubercles, and a large number of lepra bacilli were found.

The woman was said to have subsequently died of pulmonary tuberculosis.

This is the second case of leprosy in a Caucasian that he had ever seen during a practice of over fourteen years in San Francisco. He assumes from this that while the danger of the spread of leprosy in California among the whites is not pressing, it must be remembered that it is a disease that slowly and tenaciously invades a country, the invasion to become appreciable often requires several generations. In the fullness of time, when many lepra centers are established, the invasion seems to be more rapid.

DR. J. HENRY BARBAT thought there was some possibility of the nodes on the skin of this patient being tuberculous, as the patient had died of pulmonary tuberculosis. The similarity of the lepra bacillus to the bacillus of tuberculosis might account for the apparent finding of the lepra bacillus in the tubercles of this patient.

DR. PHILIP KING BROWN said that the bacilli being found in the skin in large numbers would, in itself, be almost diagnostic of leprosy. In post-mortem examinations he had found large numbers of the bacilli all through the skin, as well as in the nodules.

DR. MONTGOMERY said that almost all cases of tubercular leprosy die of tuberculosis. He finds no difficulty in differentiating between the lepra bacillus and the bacillus tuberculosis. The bacillus tuberculosis is very seldom found in cases of lupus, which, by the way, is a very rare disease in California.

## Cleveland Medical Society.

*Regular Meeting, September 14.*

President Dr. Henry S. Upson in the chair.

DR. P. M. FOSHAY introduced a resolution, which was unanimously adopted, requesting the State Board of Medical Registration and Examination to raise the standard which it has prescribed for those wishing to enter on the study of medicine.

### POPLITEAL ANEURYSM.

DR. CARL A. HAMANN presented a case of popliteal aneurysm which had been cured by digital pressure of the femoral artery for forty-six hours. The aneurysm had been about the size of a hen's egg, and had been accompanied by the usual signs, that is, a distinct bruit, expansile pulsation, some edema of the leg, and also distension of the superficial veins. Operation was contraindicated by the existence of a dilated aorta and a hypertrophied left ventricle. He said that digital compression is the best way of treating popliteal aneurysm, and this should always be tried before an operation is resorted to.

### PRACTICAL POINTS ON THE MANAGEMENT OF LABOR.

DR. FRANK S. CLARK read a paper on this subject, in which he emphasized the importance of all antiseptic precautions in obstetric work, and suggested that obstetrics was neglected by medical societies. He stated that in all instances puerperal sepsis is due to lack of cleanliness on the part of the physician or the nurse. He suggested that the fees in obstetrics are much too low, which is probably one reason for which physicians are inclined to be somewhat careless in their work, particularly in the matter of making sufficient visits after confinement to be personally assured that their patient is doing well.

DR. HARRIS G. SHERMAN, in the discussion, said that ophthalmia neonatorum is one of the great causes of blindness and can always be avoided by the physician himself washing out the eyes with some simple antiseptic. Nitrate of silver, as often used, is too strong.

DR. RALPH J. WENNER thought that obstetrics was not more neglected than other branches of medicine. He had seen ophthalmia neonatorum in a few cases arise under what appeared to be perfectly aseptic conditions. While there is some carelessness in obstetric work, no sweeping charges against the entire general profession were justified.

DR. GEORGE S. SMITH thought with the essayist that there is a great deal of carelessness on the part of the general practitioner and the teaching of obstetrics in medical colleges. He was convinced that fees for this work in the Western cities are much too low.

DR. CLARK, in closing, agreed with Dr. Sherman's remarks concerning the care of the infant's eyes. In reply to a question by Dr. Joseph E. Cook, he stated that he had never attempted repair of a cervix immediately after labor, for fear of infecting the uterus.

### THIOSINAMIN IN CORNEAL OPACITY.

DR. HARRIS G. SHERMAN reported thirty-three cases of corneal opacities treated by thiosinamin given in one-grain doses three times a day. He had secured favorable results, although not complete absorption of the opacities. He was convinced that the drug possesses very marked power of absorbing overgrowth of connective tissue. He urged others to use the drug in suitable cases to determine its further value.

DR. WILLIAM E. BRUNER said that he had used the drug in a few cases of corneal opacity, and recalled one which was markedly benefited.

DR. JOHN B. MCGEE said that the practical point brought in this paper was the use of the drug in absorbing abnormal growths of connective tissue. He had had some favorable results with it and some that were not so favorable.

DR. SHERMAN, in closing, said that the one most interesting fact in regard to the drug is its action in absorbing lupus and scars of a deep-seated nature. Some investigators have reported most favorable results with it in such conditions. Glandular growths have also been successfully treated with it. In his cases, while complete absorption did not result in every instance, the vision was very markedly increased in all.

### MYOMA COMPLICATING LABOR.

DR. JOHN J. THOMAS reported a case of labor complicated with fibroid tumor, in which great difficulty was experienced in determining the conditions during labor, and in which the tumor disappeared completely afterward without operation or treatment of any kind. He also reported a case of acute catarrhal laryngitis in a child 4 weeks old, accompanied by severe and prolonged spasm of the larynx.

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## Chicago Medical Society.

*October 3, 1900.*

President James H. Stowell, M.D., in the chair.

DR. JOHN B. MURPHY read a paper on "Tuberculosis of the Testicle, With Special Consideration as to Its Conservative Treatment." It will appear in an early number of THE JOURNAL.

### THE VALUE OF ANTISEPTIC NEBULÆ IN PULMONARY TUBERCULOSIS.

DR. HOMER M. THOMAS followed with a paper on the above subject. At the outset the author reviewed the various methods of cure for tuberculosis which have been brought forward since 1882. A candid consideration of all those methods of treatment emphasizes his belief that they are merely collateral agencies; that the fundamental processes of cure are established by nature, not by the physician. The author's earlier papers were devoted to a review of animal experimentation. These progressively demonstrated the presence of antiseptic nebulæ from the nasal passages down to the throat, trachea and larger bronchial tubes. Additional animal experimentation microscopically showed the presence of oil globules in the pulmonary alveoli. The following benefits seem to the author to be established, as a reason for the general use of antiseptic nebulæ in the treatment of pulmonary tuberculosis:

1. The respiratory capacity, which is very limited in tubercular patients, is increased.
2. The catarrhal condition of the air-passages is diminished, thereby aiding a better introduction of air into the lungs.
3. The pulmonary passages are kept in an aseptic condition, and the danger of new invasion by tubercle bacilli is minimized.
4. The marked relief of cough and dyspnea.
5. The alimentary tract is undisturbed by drugs, giving ample opportunity for the increase of vital resistance by suitable diet and constitutional treatment.
6. The treatment of pulmonary tuberculosis by the inhalation of antiseptic nebulæ is rational and practicable.

### PRESSURE THERAPY IN GYNECOLOGY AND OBSTETRICS.

DR. PALMER FINDLEY said that the method which he proposed is a modification of Freund's so-called "resorption cure." It consists of the introduction of a Carl Bruns' colpeurynter into the vagina, filled with 500 to 1000 grams of quicksilver. Over the abdomen is placed a bag of shot weighing one to three pounds. The patient is placed on her back or side, depending on the site of the pelvic exudate, and the pressure is continued for from one to several hours. The foot of the bed is elevated and the hips are elevated by pillows. The bladder and rectum are first emptied. This treatment is repeated daily until the desired results are obtained. When pain is caused, the pressure is relieved by removing the quicksilver and shot-bag. The danger of continuing the treatment in such an event lies not alone in the discomfort, but in the liability of exciting an acute exacerbation of the subacute or chronic inflammation, and in the dissemination of an unrecognized virulent infection. This is particularly likely in latent gonorrheal infection.

The indications for the treatment are parametritic exudates, particularly those lying low in the pelvis; cellulitic exudates, and in this lesion the treatment is especially applicable, because the exudate lies low in the cul-de-sac or in the broad ligaments, and is therefore directly compressed by the colpeurynter. It is in fixed retroplaced uteri that the method is most applicable. Here, in two or three treatments, the uterus is brought forward by direct pressure from behind and

by the stretching of the adhesive bands, and at the same time the posterior vaginal wall is put on a stretch, thus throwing the uterus forward.

The method has lately been advised in retroverted, incarcerated pregnant uteri. Halban reports a reposition of the uterus by a single trial. Incarcerated pelvic tumors may be treated by the same method, if located low in the pelvis.

The method is not recommended as a substitute for massage in all cases. There are cases in which massage is preferable, as, for example, in adhesions attached to the fundus of the uterus, or involving normally placed appendages, but in the majority of instances the procedure is more convenient of application and the results are more quickly gained, requiring days where pelvic massage may require weeks and even months.

# Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

**Medical Record (N. Y.), September 29.**

1 *Some Personal Observations on the Effects of Intrapleural Injections of Nitrogen Gas in Tuberculosis. Henry P. Loomis.
2 *Electricity in Gynecology and the Present Reluctance of Gynecologists to Use Electricity. Robert Newman.
3 *A Cure of a Case of Hypertrophic Alcoholic Cirrhosis of the Liver, with Remarks. M. Luzzatto.
4 *The Co-operation of the Medical Profession of the United States with the National Confederation of State Medical Examining and Licensing Boards in Establishing Interstate Reciprocity for the License to Practice Medicine. Emil Amberg.
5 *Treatment of Fractured Patella. William B. Trimble.

**New York Medical Journal, September 29.**

6 *Hypertrophy of the Turbinated Bodies, and Their Relations to Inflammation of the Middle Ear, with Report of Fifteen Hundred Operations. Christian R. Holmes.
7 Case of Ozena of Probably Sphenoidal Origin. John W. Farlow.
8 *The Treatment of Umbilical Hernia in Children and Adults; Some Points in Technique; A New Method of Radical Cure. J. Coplin Stinson.
9 A Chinese Physician. William E. S. Fales.
10 *The Use of Piperazin in Nephrolithiasis. Charles J. Aldrich.
11 Some Observations Upon Syphilitic Manifestations in the Optic Nerve and Retina; Inflammatory Manifestations. (To be concluded.) Paul Turner Vaughan.

**Philadelphia Medical Journal, September 29.**

12 *Appendicitis. Samuel Lloyd.
13 *On Some Cases of Pleural Exudate with the Physical Signs of Pneumonia. Herman B. Allyn.
14 *A Digest of 200 Cases of Pneumonia. C. Z. Weber.
15 Pyorectomy for Adenocarcinoma, with Report of a Case. Jos. H. Branham.
16 *Inhibition of the Heart as an Aid in Diagnosis. Albert Abrams.
17 *Hemorrhoids: Etiology, Pathology and Treatment. J. William J. Doyle.
18 *Some Clinical Effects of Ammonio-Formaldehyd. Edward L. Keyes, Jr.

**Medical News (N. Y.), September 29.**

19 Medicine and Superstition. G. W. Guthrie.
20 *Some Studies in Metabolism in Chronic Nutritional Disease. G. W. McCaskey.
21 The Art of Keeping Cool, with Special Reference to the Proper Use of Water. Ralph W. Parsons.
22 *The Dose of Potassium Iodid, with Reference to Its Untoward Effects Upon the Upper Respiratory Tract. Lewis S. Somers.
23 A Rare Case of Injury to the Membrana Tympani. Thomas D. Tuttle.

**Boston Medical and Surgical Journal, September 27.**

24 *A Study of the X-Ray Plates of One Hundred and Forty Cases of Fracture of the Lower End of the Radius. E. A. Codman.
25 *Traumatic Joints. Homer Gage.
26 *A Critical Review of Thirty Cases of Pyosalpinx. G. S. Whiteside and W. J. Walton.
27 Post-Operative Hematemesis. Kenelm Winslow.

**Cincinnati Lancet-Clinic, September 29.**

28 *Does Physical Law Apply to the Human Body? W. O. Owen.
29 Fistula in Ani and Rectum. George J. Monroe.

**Medical Age (Detroit), September 25.**

30 Chronic Inflammation in Structures of the Elbow Following Injury—Villous Degeneration of the Knee-Joint. James H. Halloway.
31 Two Pathologic Conditions: 1. Foreign Bodies in the Eye. 2. Inflammation of the Middle Ear. Louis W. Flanders.
32 Renal Calculus (Nephrolithiasis-Urolithiasis). Ewing Marshall.

**Virginia Medical Semi-Monthly, August 24.**

33 Malaria. J. T. Wilson.
34 The Mosquito in Malaria. P. L. Campbell.
35 Blood Changes in Malaria. J. E. Wilson.
36 Hematuria of Malaria. Samuel E. Milliken.
37 Modern Pathology and Treatment of Appendicitis. Pinckney French.

**Virginia Medical Semi-Monthly, September 7.**

38 *The Angiotribe in Abdominal Surgery. Hugh M. Taylor.
39 Entero-Colitis. William E. Fitch.
40 Relation of Visual Defects to Occupation. William B. Meany.
41 Diseases of Stomach. Edgar J. Spratling.
42 Acute Affection of the Tympanic Cavity and Eustachian Tube. J. R. Garrett.
43 Anemia, the Cause of Indigestion, and Indigestion the Subsequent of Anemia—Treatment. Wm. H. Vail.
44 The Blood as an Index of the Beneficial Action by Iron. Tilghman P. Marden.

**American Practitioner and News (Louisville, Ky.), September 1.**

45 *The Conservative Tendency in Genito-Urinary Work. F. R. Charlton.
46 *Therapeutic Value of Electricity. L. T. Lowder.
47 Operative Treatment of Hernia. J. T. Dunn.

**Illinois Medical Journal, September.**

48 *Medicine or Surgery. A. C. Corr.
49 *On the Evils Resulting from Naming Diseases or Their Supposed Causes After Individuals and the Importance of Maintaining a Clear Distinction Between Etiology and Pathology. N. S. Davis.
50 A Report of 240 Cases of Mitigated Smallpox with Symptoms and Diagnosis. C. E. Wilkinson.
51 Our Milk Supply; Some Observations at Home and Abroad. S. E. Munson.

**Archives of Ophthalmology (New Rochelle, N. Y.), July.**

52 *The Ophthalmic History of an English School (A. D. 1856 to 1900). Sydney Stephenson.
53 On Hemorrhagic Retinitis in Consequence of Endarteritis Proliferans, with Microscopic Examination of a Case. M. Reimar.
54 *Anatomical Examination of a Case of So-Called Coloboma of the Optic Nerve. Martin Goerlitz.
55 *Distention of the Sheath of the Optic Nerve with Cerebrospinal Fluid. Osteoplastic Resection of the Outer Wall of the Orbit (Kroenlein's Operation). Matthias Lanckton Foster.
56 The Axis of Rotation of the Ocular Muscles, with a Simple Method of Calculating Their Position, and the Correction of Certain Errors. Harold Wilson.
57 *The Theory of Accommodation. W. N. Suter.
58 *On Strictly Simple Evisceration of the Eye-Ball. H. Gifford.

**Cleveland Medical Gazette, September.**

59. Clinical Lecture on Cataract. D. B. Smith.
60 Intubation and Antitoxin. H. H. Jacobs.
61 Notes on the Enemata Employed After Abdominal Sections. Hunter Robb.
62 The Diagnosis of Tubercular Disease of Bone. Charles G. Foote.
63 Two Cases of Mastoiditis. W. E. Shackleton.
64 Formalin and Some of Its Uses in Ophthalmology. Edward S. Lauder.

**American Journal of Obstetrics (N. Y.), September.**

65 *The Evolution of My Technique in the Treatment of Fibroid Uterine Tumors. Howard A. Kelly.
66 *Membranous Dysmenorrhea. Lydia M. De Witt.
67 The Technique of Operations for Intraligamentary Tumors. Wm. H. Wathen.
68 Puerperal Eclampsia. John F. Moran.
69 Compression of the Ureters by Myomata Uteri. J. H. Mason Knox. Jr.
70 *On Suspending the Uterus on the Round Ligaments. Carl Beck.
71 Spontaneous Amputation of Tube and Ovary. George H. Noble.
72 The Role of the Liver in the Production of Eclampsia. W. A. Newman Dorland.
73 A Case of Metastatic Papillary Adenocarcinoma of the Recto-Vaginal Septum. Henry D. Beyea.
74 *Clinical and Pathological Records of Two Rare Gynecologic Conditions. William H. Weir.
75 Puerperal Metritis, Etc., with Subsequent Acute Infection of Fistula in Ano. J. Coplin Stinson.
76 A Case of Extrauterine Pregnancy with Retention of Fetal Bones for Seventeen Years. I. P. Klingensmith.
77 Placenta Previa. L. W. Atlee.

**Hot Springs Medical Journal.**

78 *Modern Surgical Treatment of Hemorrhoids. Gustavus M. Blech.

**University Medical Gazette (Philadelphia), September.**

79 The Technique Employed in the Surgical Department of the University Hospital. Service of Dr. J. William White. Alfred C. Wood.
80 Obstetrical Technique in the Maternity Department, University Hospital. Service of B. C. Hirst, M.D. John C. Hirst.
81 Care of Surgical Cases in the Gynecological Department of the University Hospital. Brooke M. Anspach.

82 The Preparation for Operations in the Author's Service at the University Hospital. Edward Martin.
83 Technique Employed in the Children's Orthopedic Department of the University Hospital. De Forest Willard.
84 *An Operation for Ununited Intracapsular Fracture of the Neck of the Femur. Gwilym G. Davis.
85 A Splint for the Treatment of Equinovarus. Gwilym G. Davis.
86 Spurious Meningocele. Joseph Sailer.

**Louisville Monthly Journal of Medicine and Surgery.**

87 Mind and Vital Force: Their Action Upon the Human Organism Through the Brain and Nervous System. J. Glahn.
88 Typhoid Fever. J. E. Pace.
89 Obstetric History—Taking in Private Practice. Joseph B. Cooke.
90 Death from Hemoglobinuria Without Fever, Except the Initial Attack. H. E. M'Kay.
91 Summer Diarrhea of Children. J. Rowan Morrison.
92 An Interesting Case: A Bone Lodged in the Rectum. L. Lazaro.
93 The Use of Saw Palmetto Co. in Genito-Urinary Diseases. Walter P. Ellis.
94 A Report of Surgery (continued). H. Horace Grant.

**Buffalo Medical Journal, September**

95 *Practical Hygiene. Henry R. Hopkins.
96 *Anesthesia by Nitrous Oxid Gas and Ether. Prescott Le Breton.
97 Gonorrheal Rheumatism. J. Henry Dowd.
98 *The Abuse of Quinin. W. F. Church.
99 *The Great Danger Attending the Use of Long-Tube Nursing Bottles. Ernest Wende.

**Medical and Surgical Monitor (Indianapolis, Ind.), September.**

100 Hemophilia, with Report of an Aggravated Case. John L. Masters.
101 Some Medical Observations of the German Speaking Countries. J. F. Barnhill.

**International Medical Magazine (N. Y.), September.**

102 *Venomous Snakes, Their Bites and How to Treat Them. Joseph McFarland.
103 *Defects in the Present System of State Medical Examinations. John S. Lewis.
104 Laceration of Perineum, Uterine Displacements, Ovarian Cysts, Tubercular Peritonitis, etc. Franklin H. Martin.
105 The Treatment of Pott's Disease. James K. Young.
106 The Quantitative Estimation of Sugar in the Urine. A Robin.
107 The Classification and Symptomatology of Abscesses. Charles L. Leonard.
108 Gastric Neurasthenia. D. J. M'Carthy.
109 Gastric Atony or Deficient Motility (Motor Insufficiency, Mechanical Insufficiency, Myasthenia Gastrica). Boardman Reed.
110 A Few Remarks About Carcinoma of the Liver. G. McConnell.

**Peoria Medical Journal, September.**

111 Pharyngeal Adenoids. H. M. Harrison.
112 The Question of Our Milk Supply. W. T. Shidley.

**Interstate Medical Journal (St. Louis), September.**

113 *Report of the Treatment of Aneurism with Gelatin Injections. H. L. Neitert.
114 Injuries to the Eyeball, With Report of Cases. Ellett O. Sisson.
115 Remarks on Stomach Diagnosis and Treatment, with Report of Cases. M. D. Schmalhorst.

**Columbus Medical Journal, August.**

116 President's Annual Address Before Hempstead Memorial Academy of Medicine. Joseph S. Rardin.
117 Phenacetin for the Relief of Pain. Frank Warner.
118* Subphrenic Abscess Following Appendicitis; Two Cases. J. F. Baldwin.

**Denver Medical Times, September.**

120 *Reflex Neurosis from Disturbed Pelvic Mechanism. Byron Robinson.
121 Water as a Remedy. J. W. Gunn.
122 The Physician as a Man. John A Donavan.
123 *Early Corrective and Educative Treatment of Convergent Strabismus. Wm. C. Bane.

**Colorado Medical Journal, August.**

124 Syphilis of Lungs, Heart and Vessels. H. B. Whitney.
125 *Treatment of Syphilis. Wm. P. Munn.
126 Syphilis of the Abdominal Viscera. Henry Sewall.
127 *Inherited Syphilis. Sol. G. Kahn.
128 *Is Syphilis Ever Actually Cured? F. Finney.
129 *Prophylaxis of Syphilis. E. Stuver.
130 *Syphilis in Armies. Henry Lippincott.
131 *Syphilis and Trauma. Leonard Freeman.
132 Injuries to the Eye from Accidents in the Mine. (Concluded.) Melville Black.
133 *The Rational Treatment of Abortion in Country Practice. J. W. Cline.

**Pacific Medical Journal (San Francisco), September.**

134 Endometritis. Ch. W. Bryson.
135 Suppurative Middle Ear and Mastoid Disease and Some of Their Brain Complications—Some Cases Cited. Redmond W. Payne.
136 *Studies on the Digestion of Breads. Alfred W. Perry.
137 An Interesting Case. J. T. Stewart.

**Merck's Archives (N. Y.), September.**

138 Treatment of Morphinism. Charles J. Douglas.
139 *The Limitations of Ergot. F. A. Seymour.
140 Some Medical Philosophy. W. C. Cooper.

**Medical Examiner and Practitioner (N. Y.), September**

141 Interesting Phase of a Medical Examiner's Work. Talbot Jones.
142 Life Insurance and Cardiac Disease. F. G. Finley.

**Southern California Practitioner, September.**

143 Report of a Case of Fibroma Involving Tympanic Cavity. E. W. Fleming.
144 Occipito-Posterior Positions. Idris B. Gregory.
145 What are Necessary and Desirable Data Upon Health Resorts? Edward O. Otis.
146 *Pyorrhea Alveolaris and Its Relation to General Surgery. Geo. E. Abbott.
147 Some Suggestions Concerning the Use of Vegetable Digestive Ferments in the Treatment of Phthisis and Other Wasting Diseases. H. Mansfield.

**Alabama Medical Journal, September.**

148 The Need of a Separate Prison for Consumptive Convicts. W. H. Blake.
149 Difficult Labors and Their Management. Thomas E. Dryer.
150 Pneumonia. Richard M. Fletcher.
151 *The Effect of Flashes of Electric Light Upon the Eye. Dunbar Roy.
152 Notes on Some Remedies of Recent Introduction. H. A. Moody.

**Charlotte Medical Journal (N. C.), September.**

153 Infantile Diarrheas. M. H. Fletcher.
154 Protonuclein as a Remedy in Tuberculosis. C. W. Canan.
155 Bilious Fever. F. B. Cullens.
156 Alcohol in Diseases of Children. I. A. McSwain.
157 The Proper Method of Vaccinating. A. H. Ohman-Dumesnil.

**Texas Medical News, November.**

158 Appendicitis. J. G. Boyd.
159 The Insane from the Standpoint of the General Practitioner. G. H. Moody.
160 *The Spirit of Commercialism in the Modern Practice of Medicine. V. P. Armstrong.
161 Dysmenorrhea. Ethan A. Sherrill.
162 School Hygiene. Charles A. R. Campbell.

**Fort Wayne Medical Journal-Magazine, September.**

163 A Case of Tetanus Treated with Anti-Tetanic Serum. N. L. Deming.
164 Hygienic Management of Kidney Disease. Frederick R. Charlton.

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## AMERICAN.

1. **Nitrogen Gas Injections in Phthisis.**—Loomis has had good results with the method of injecting nitrogen into the pleura, advised by Murphy, in cases of tuberculosis, and reports a series of cases. He has not seen any absolute cures, but has seen an apparent arrest in two cases and no bad results in any. Improvement, especially constitutional, is marked and he finds the injections particularly beneficial in cases of pulmonary hemorrhage.

2. **Electricity and Gynecology.**—The use of electricity is commended by Newman, who finds from his own experience that better results are obtained from it than from any other means in many gynecologic conditions, and the lack of favor with which it is received by gynecologists has not been explained. He thinks we should have better instruction in electrotherapy.

3. **Cirrhosis of the Liver.**—The case reported by Luzzatto shows, he thinks, that alcohol is not the sole cause of cirrhosis of the liver, and that, when it is the cause, the disease is curable, more often the hypertrophic form, but the atrophic form also. It often shows symptoms characteristic of infectious disease. In his case the patient was entirely cured with milk, potassium iodid and diuretics.

4. **Interstate Reciprocity.**—Amberg's paper advocates the co-operation of the profession at large with the confederation of medical examining boards for the purpose of advancing the general interests of the profession. He suggests an interstate reciprocity committee, to be appointed by the national confederation, which will keep in touch with all other similar committees and, if thought advisable, will publish a journal.

5. **Fracture of the Patella.**—Trimble describes his method of operating for fracture of the patella, and claims that by operation only can good results be obtained. The aponeurotic

fringe can be removed only by operation, and if nothing has been interposed at the time of injury, the pressure required to control the contraction of the quadriceps interferes with the circulation and is also unendurable. Fibrous or ligamentous union is the best that can be expected from non-operative measures, and this will permit stretching to such a degree as to produce serious consequences. The operation should not be attempted after the fiftieth year, and other contraindications are diabetes and albuminuria. His method is the use of the wire suture.

6. **Hypertrophy of Deformed Bones.**—Holmes holds that in the second stage of hypertrophic rhinitis there is only one successful treatment, that is, careful surgical interference. He describes and illustrates his method and insists on the comparative importance of the operation. In all cases he removes as little of the edge of the inferior turbinate as possible for restoration of sufficient breathing space and saves as much of the anterior end of the bone as possible, inclining the line rather upward and backward from the lower edge of the anterior end, so as to incline as much as possible of the posterior hypertrophy, the saw having been pushed backward until its blunt tip is in the pharynx.

8. **Umbilical Hernia.**—The conclusions drawn from a comparison of the various methods by Stinson are: 1. That with careful antiseptic precautions, provided the operator is skillful and familiar with the special anatomical and pathological conditions associated, an operation for the cure of umbilical hernia has a mortality of about nil, or less than that associated with the condition previous to the operation. 2. That sterilized chromicized tendon or, in its absence, carefully chromicized catgut, is the most suitable material for buried sutures. 3. That before closing the wound the sac should be removed, the contents cleared out, the edges of the serosa overcorrected and then united with a layer of continuous sutures; the internal ring or opening in the transversalis fascia should be closed by continuous sutures; the internal ring should be reinforced and the remainder of the breach in the abdominal wall closed by uniting the broad edges of the fascia—the linea alba and lineæ semilunares—in two layers, avoiding tension by loosening one or both of the recti muscles from their sheaths, and bringing them together in the median line by sutures to fill and close the gap; the recti muscles are also to be used to close the breach when the fascial layers are atrophied; the skin is closed with continuous stitches without drainage. 4. That in the immense majority of suitable cases the patients are cured by the operation. 5. That the operation described closes the breach in the abdominal wall firmly and durably and without tension; has all the advantages of other operations, and that, having many additional advantages, and fulfilling all the indications for a radical cure, it should be followed by the best results.

10. **Piperazin.**—Aldrich reports two cases in which he thinks that piperazin prescribed in a diurnal of 20 to 25 grains in a large quantity of water was successful in relieving the condition of nephrolithiasis. He suggests the use of carbonated piperazin water in these cases as more agreeable and effective.

12. **Appendicitis.**—The general facts in regard to appendicitis, its tendency to recur, the classification of cases, etc., are discussed in full by Lloyd, and the technique of the operation described. He thinks there can be no longer any question in regard to the advisability of operating. His own experience shows of 160 appendectomies, 4 deaths—a ratio which he thinks will compare favorably with any medical statistics that can be offered and justifies early and radical operation.

13. **Pleural Exudate With Physical Signs of Pneumonia.**—Allyn reports a case of empyema which began with symptoms closely resembling pneumonia—chill, fever, cough, expectoration and physical signs on admission in accordance. At the autopsy there was found a thickened pleura with about 250 c.c. of pus, a fibroid lung with bronchiectasis, and old tuberculous foci in both lungs. There was probably just enough area above the small air-space to act as a resonator for the voice and breath-sounds and transmit them through the dilated bronchus. He asks whether there is any certain way in which the pleural exudate can be recognized and admits that there is no pathognomonic sign. The most important test is, of course, the puncture with a needle, but this may be also misleading, and it is sometimes difficult to obtain fluid, and when found, it may possibly come from a local subphrenic abscess. The X-ray would be of great service.

14. **Pneumonia.**—After an analysis of the cases, the author offers the following general observations: The most frequent predisposing cause of pneumonia is some pre-existing disease. Idiopathic pneumonia may be attributed entirely to depressing influences. Pulmonary inflammations are not only more prevalent in special periods, but the type also is more virulent at certain times. La grippe not only augments largely the number of cases during its prevalence, but has increased also the mortality. The left-sided croupous form has proved more difficult to manage and more frequently passes into phthisis than the other forms. Catarrhal pneumonias, when the apices of the lung are involved, are also associated with delirium. Alcoholism and typhoid do not enter as factors in the mortality of the cases discussed, but both have been observed to retard the stage of resolution and otherwise to lengthen the convalescence. As regards the treatment, he would first use counterirritants, arterial sedatives, antipyretics and anodynes. In the second stage he would cautiously, but vigorously, employ arterial sedatives, antipyretics, and even counterirritants, with the idea of limiting the area of infiltration and hepatization. In his experience it is usually in this stage that the physician is first called, and he found ammonium carbonate and iodid especially indicated, while only sufficient of the antipyretic, as, for instance, sodium salicylate, is employed to keep the temperature well in hand. He seldom uses opium in combination, but alone when indicated. Venesection has been employed twice without special effect on the lung itself. Cuppings to relieve pleuritic stitches were beneficial. In the third stage, where is the greatest danger, antipyretics are discontinued and alteratives, tonics, etc., are employed. When the affected lung is once restored to the normal condition, he thinks the official compound syrup of hypophosphites is serviceable.

16. **Inhibition of the Heart in Diagnosis.**—Abrams summarizes his investigations on the value of inhibition of the heart by forcible contraction of the muscles of the neck as follows: 1. The inhibition maneuver may cause organic cardiac murmurs to become faint and even, in exceptional cases, inaudible. 2. Transmitted murmurs are more amenable to the maneuver. 3. The fainter the murmur, the more easily is it suppressed. 4. When a transmitted murmur can be inhibited the tone which it masks can be auscultated. 5. The heart-tones are less amenable to inhibition than are the heart-murmurs. 6. Hemic murmurs are more readily inhibited than those of organic origin. 7. As a rule, anemic murmurs can be suppressed and their disappearance is marked by the reappearance of tones. 8. Exocardial murmurs are easily influenced by inhibition. 9. When the maneuver is incorrectly executed, the result is to increase the intensity of the murmur owing to increased exertion, which intensifies the heart's action. 10. When often repeated the inhibition murmur is futile owing to over-stimulation of the vagi. 11. In irregular action of the heart or in delirium cordis, the inhibition maneuver, by momentarily inhibiting the rapidity of the heart, renders signal service in determining the time of a murmur, being practically in its effects like the physiologic action of digitalis on the heart. 12. Inhibition maneuvers enable us to determine the condition of the vagi as to cardiac inhibition and guide us in the administration of the cardiotonics.

17. **Hemorrhoids.**—After noticing the treatment of hemorrhoids and advising the ligature treatment, Doyle offers special objections to the use of carbolic-acid injections, which, he thinks, are still sometimes practiced by responsible practitioners.

18. **Ammonio-Formaldehyd.**—Keyes sums up his conclusions as follows: 1. Urotropin seems to be almost a specific

in the treatment of some cases of acute catarrhal pyelitis, uncomplicated. 2. To prove effective it may have to be administered in high doses until the urine is practically clear of bacteria, after which a smaller dose may suffice. 3. In judging the effects of the drug, the centrifuge and microscope should be employed. 4. The dose must not be sufficient to cause pollakiuria and dysuria by irritation of the neck of the bladder. 5. The possibility of such an irritation can not be overlooked, even when very small doses are employed. 6. Urotropin is extremely serviceable as a prophylactic of the various forms of urinary septicemia and urethral chill. 7. Its routine employment both before and after operations on the urinary passages is indicated. 8. The urine containing urotropin occasionally has an escharotic effect upon wounds, which may constitute a contraindication to its employment.

20. **Studies in Metabolism.**—The subjects noted by McCaskey are especially the excretion of urea and uric acid. In urea hypo-excretion we have a depressed condition where the functional and nutritional processes must be stimulated. With increased urea excretion, of which diabetes mellitus is one of the most prominent conditions, the excessive metabolism must be cared for, and if in the excretion strictly within the normal range we still have nutritional disturbances, we should look for toxic conditions resulting from disorder of some principal organ of the body. As regards uric acid, he thinks that the theory of its being derived from the nuclein of the white blood cells is not entirely supported by clinical observation. In one case of splenic myelogenous leukemia he observed that the quantity of uric acid fluctuated widely, and all that he can say as regards these variations is that they indicate a disorder of the normal metabolic processes which has a more or less important bearing on chronic nutritional disorders. Other points of interest found by urine analysis are the presence of leucin and tyrosin and the variations in the quantity of different organic salts, especially the phosphates and chlorids as bearing on the metabolism.

22. **Potassium Iodid.**—The inconvenient effects of potassium iodid occasionally observed are noticed by Somers, who shows that these are sometimes caused by nutritional disease as well as by an apparent cumulative effect in long dosing. The individual variations are very great and we can not consider the tolerance to the drug as indicating the presence or absence of specific infection. The recent explanation of some of the peculiarities of reaction by von Cyon is that the iodid salts circulating in the blood in small doses were changed into iodiothyrin by the thyroid gland and this substance produces reaction; while in large doses they are eliminated by the kidneys in the form of soluble salts. It is to a certain extent possible to prevent the phenomena by the use of drugs such as arsenic and belladonna and by increased dilution of the iodid.

24. **Fracture of the Radius.**—From a study of the X-ray plates of a large number of cases of fracture of the radius, Codman divides the fractures into ten distinct types: 1. Fracture through the base of the styloid process, which does not affect the hand or wrist and which is properly treated by plaster straps around the wrist. 2. Fracture of the inner angle of the lower end of the radius without radical displacement of the hand, and its treatment is similar to the above. 3. Transverse fracture at or a little above the epiphyseal line (in adults) without displacement. Of these there are quite a number. 4. Comminution of distal fragments. 5. Separation of the epiphysis of the lower end which often present themselves with fragments completely reduced, but may show the typical silver-fork deformity. As a rule they are easily reduced, but generally tend to become readily displaced. Careful reduction and fixation in splints or plaster for a couple of weeks is almost sure to produce a good result. 6. This class is quite common. It consists in separation of the epiphysis of the lower end with a chip from the posterior surface of the diaphysis. Fixation and the dorsal pad are enough in most cases. If there is radial displacement cross traction as in Class 8 may also be employed. 7. The impaction of the lower fragments into the shaft is rare, occurring only twice in 140 cases. Unless contraindicated by age, it is better to break up the impaction and use anterior and posterior splints. 8. This class is the typical Colles' fracture and Codman divides it into two forms: *a*, with marked radial displacement of the fragment, and *b*, that in which posterior deformity is most decided. The skiagraphs show both the lateral and anteroposterior view of this fracture. The important point in the treatment is the pulling down and the pushing of the lower fragment over the end of the dorsal edge of the upper. Once reduced it can be kept in place, but has a tendency to slip out when pressure is omitted, and a simple pad of sheet wadding or felt pressed over the dorsal surface of the lower fragment and an anterior pad along the front of the radius about three-fourths of an inch wide and one-fourth of an inch thick are necessary. This latter stops just short of the sharp edge, which is fastened on the arm by adhesive straps before the splints are applied. A posterior splint to the knuckles of the first phalanges and an anterior, to the thenar eminence holds these in position. To control the tendency of the hand to become displaced to the radial side a cross-traction method is used. Two adhesive straps are looped about the wrist in opposite directions, one tending to pull the ulna toward the radial side and the other to pull the fragment with the hand to the ulnar side. These are placed at the same time as the anterior and posterior pads, the splints are held by an assistant, and after putting a circular strap about the upper end of the splint, traction in the opposite direction is put on the lower straps and the ends curled about the splints and caught. This leaves the ulnar side free opposite the ulnar fragment and the radial side free opposite the upper fragment and ensures a good circulation. The fingers and thumb are allowed free movement throughout and the splints are cut off at the wrist at the end of the second week. 9. Stellate fracture of the lower end of the radius with longitudinal fissures extending into the shaft. It has occurred six times, or in 4 per cent. of 140 cases. A simple band around the wrist is the only fixation required. 10. Reverse Colles' fracture, anterior displacement of the lower fragment, which has been carefully described by Roberts, of Philadelphia. The author does not claim that all fractures of the lower end of the radius are included within one of these classes, as other varieties are possible, but he wishes to call attention to the variety of the conditions found. In conclusion he emphasizes the following points: 1. True Colles' fracture formed by 46 per cent. of 140 cases of fracture of the lower end of the radius. 2. A knowledge of the position of the fragments is necessary for intelligent treatment. 3. The application of padding and splints should vary according to the displacement shown in the skiagram. 4. If the X-ray shows that marked deformity is still present after the splints have been applied, ether should be given, and another energetic attempt at reduction made. 5. Concomitant fracture of the ulnar styloid occurred in at least 62 per cent. of 140 cases, and if 39 cases in which this process was obscure in the skiagram are deducted, fracture occurred in 86 per cent. 6. In true Colles' fracture pressure over the anterior edge of the upper fragment should be avoided and cross-traction should be used to correct the radial displacement of the lower fragment. 7. Statistics of the result of Colles' fracture are not of value unless the pathology of each case is determined by a skiagram.

25. **Traumatic Joints.**—The conclusions of Gage's article are as follows: 1. All injuries to joints accompanied by loss of function are always attended by more or less laceration of the tissues in or about the joint. 2. Delays in the restoration of function are due in most instances, not to any complicating diathesis, but to the changes incident to the repair of these lacerations and their effects. 3. Such delays are best avoided by an early resort to massage and active or passive motions, and are favored by too long a continuance of rest and fixation. 4. When such delays have occurred, they are best overcome by more vigorous and persistent manipulation, supplemented by the application of heat or such other agents as may best stimulate the local circulation and favor the elasticity of the tissues.

26. **Pyosalpinx.**—From a study of thirty cases, Whiteside and Walton conclude that the gonococcus can not be proved to be the cause in so large a number of instances as is generally supposed. Pure cultures are obtained of other organisms, such as bacillus mesentericus, pneumococcus, colon bacillus, streptococcus pyogenes. It can not be proved that the gonococcus pre-existed in these cases and prepared the way, nor can it be disproved by such results as they have obtained. The experiments attempted to demonstrate the possibility of producing pyosalpinx by the pure cultures of these organs were all entirely negative. They do not consider the blood-count of great diagnostic or prognostic importance in this condition, and from a study of several cases they think the majority, when first seen by the surgeon, have had previous attacks. The symptoms are noted in detail and from their series of cases they conclude that the mortality of the operation taken as a whole is 16 per cent. The greatest dangers to be apprehended are in streptococcus infections from peritonitis, in all drained cases from fecal fistula, and in tubercular cases from extension of the disease to other organs.

28. **Diet in the Tropics.**—The question of diet in the tropics is discussed by Owen, who maintains from his results that the average worker in hot climates requires more food than in a cooler temperature. The laborers in the tropics do not live on vegetable food from choice, it is simply because it is more easily obtained and less liable to deterioration. This condition is exactly reversed with the Eskimo, who lives on fats. It is a matter forced upon the races by the circumstances of the surroundings, though custom has given a liking to each for his own diet. He maintains that if there is any change to be made in our diet for the tropics it should be in the nature of an increased allowance. It is not a reduction of the diet that is required, but the food should be handled with more care and be better prepared. He admits, he says, that the body may create less heat in hot climates and that his argument is not quite complete.

38.—This article has appeared elsewhere. See THE JOURNAL of August 4, p. 267.

45. **Conservatism in Genito-Urinary Work.**—Charlton notices the over-treatment of many cases of gonorrhea, a disease which is so dangerous in its effects and very common, though he repudiates the statement of Tait that every man has suffered from it. The too active treatment of stricture and the necessity of early conservative operation in kidney disease are also emphasized.

46. **Electricity.**—Static electricity is the special form here mentioned by Lowder, who finds it most beneficial in headache, painful menstruation, insomnia, nervous troubles, etc. He says we can abort an incipient cold, ease pain of an abscess, make more rapid convalescence from fevers, debility, brain fag, bronchitis, etc. Static electricity as used by him is one of the most wonderful therapeutic agents at his command.

48.—See abstract in THE JOURNAL, xxxiv, p. 1333.

49.—Ibid.

52. **Ophthalmic History of an English School.**—Stephenson reports the history, as regards contagious eye troubles, of an English charitable institution in London—the Hanwell School. The one great lesson it offers is that trachoma, no matter how prevalent and of how long standing, can be stamped out and that the continuance of such a condition in any institution is a standing reproach to its management, both lay and medical. The special measures taken were the erection of an isolation building and the complete remodeling of the main structures, which hastened and brought to rapid end the disease which had been under strictly medical measures in the old structures with only very gradual lessening.

54. **Coloboma of the Optic Nerve.**—Goerlitz reports the examination of a so-called coloboma of the nerve, which was found to be a case of unilateral malformation of the disc which corresponded to the ophthalmic picture usually given under this name. Macroscopically the enucleated ball showed a small cornea and a dilated intervaginal space. Below the nerve and between the sclera and the sheaths of the nerve there was a small elevation; the optic disc was enlarged in all its diameters and depressed in its lower portion, while its vessels had an anomalous course. Microscopically there was found a defect in the choroid leading into a circumscribed ectasia of the sclera having irregularly thickened walls. In the defect the choroid was wanting entirely, as was also the pigment epithelium. The scleral defect was filled with nerve fibers running from the disc, and a trace of other retinal elements. The optic nerve was fairly normal except for some irregularities and defects of the lamina cribrosa. The intervaginal space was conspicuously distended. The author says, comparing the anatomical condition in this case to previous ones it appears that this malformation is not so much a coloboma of the optic nerve as a coloboma of the choroid and retina with secondary formation of a scleral cyst of the lower margin of the disc.

55. **Distention of the Sheath of the Optic Nerve.**—The case reported by Foster and in which the Kroenlein operation was performed, was one of distention of the sheath of the optic nerve with cerebrospinal fluid, a condition which has rarely, if ever, been described. The author discusses the condition and notes especially the absence of optic neuritis, showing that the collection of fluid in the sheath of the optic nerve, even when it is very large, does not necessarily produce this condition.

57. **The Theory of Accommodation.**—Suter defends the Helmholtz theory of accommodation as opposed to that of Tscherning, and reports experiments made by him on the eye which seem to favor his view.

58. **Evisceration of the Eye-Ball.**—What is called simple evisceration is really, as Gifford says, evisceration plus keratectomy. For two years past he has been doing an operation which is a strictly simple evisceration; instead of cutting out the cornea he has made a meridianal incision entirely within the sclera or extending partly or entirely across the cornea, and has completed the operation through the opening thus made without removing any of the cornea. The results have convinced him that this should be the operation of election. The simple evisceration he claims tends to avoid the bursting open of the wound, first, by permitting the incision, which can be better coapted than where keratectomy is done, and second, and most important, it leaves so much more space within the globe that there is more time for the scar to organize before the contraction of the sclera attempts to stretch it over the artificial vitreous.

65.—See abstract in THE JOURNAL, xxxiv, p. 1338.

66. **Membranous Dysmenorrhea.**—From a study of the literature of several cases reported, De Wit concludes that the theory which seems to her most consistent with the histologic findings in the reported cases, as well as in those examined by herself, since inflammation is not a uniformly accompanying condition, and conception may often be positively excluded, is that perhaps under some abnormal local nerve influence, which may be congenital—since in many cases the disease begins at puberty—or even as suggested by Gautier, hereditary, or which may, through injury or local disease, be later acquired, the normal menstrual congestion and blood extravasation or fluid exudation is so greatly increased that the deeper tissues break and thus loosen the thickened decidua menstrualis *en masse* before nutrition has been sufficiently interfered with to cause its degeneration.

70. **Suspension of the Uterus on the Round Ligaments.**—Beck describes the operation previously published by him in the *Centralblatt fur Chirurgie* in 1897. The main features of this method consist in opening the abdomen in the linea alba by a small incision, seizing the fundus uteri with a traction forceps and pulling it outside the abdominal cavity. This procedure is facilitated by Trendelenburg's position. The round ligament of one side is then selected and freed to the extent of nearly three inches, the isolation beginning near its uterine attachment. Superficial incisions along both sides of the ligament permit the introduction of a grooved director.

by means of which the peritoneum can be stripped away bluntly, so that no hemorrhage occurs. The bared ligament is then held up by an aneurysm needle and pulled out from the abdomen to such an extent that the peritoneal wound margins can be united underneath. Six to seven catgut sutures suffice for the purpose. The ligament now rides on the peritoneum. To strengthen this peritoneal anchorage, fascia and muscle are also united underneath, while the ligament is suspended like a loop of a coat on a broad hook. One additional suture through the ligament itself usually suffices for fastening the ligament to the suture row. The remaining portion of the wound is dealt with in the usual manner. The margins of the integument are brought together by subcutaneous catgut sutures. Two relaxation sutures, consisting of iodoform silk, are applied through the skin, three-quarters of an inch distant from the wound margin, so that there is no direct contact with the wound-line. For prolapsus uteri the suspension of one ligament alone is sufficient, though a lateral position can not be avoided, but is usually harmless. In retroversion, fixation of both ligaments is, of course, necessary. From his experience of four years he claims that the only disadvantage of this operation and its modification is that it requires an opening of the peritoneum, but it has the great advantage of suspending the uterus in a perfectly normal position, which permits of such free motion that there is no interference either with the bladder or the rectum and no obstacle to pregnancy, as is usually the case with the ventrofixation methods.

74. **Cancer of Cervix and Fibromyomata of Uterus.**—The "rare conditions" described by Weir are primary cancer of the cervix uteri in a nulliparous woman, and fibromyomata of the uterus associated with fibroid of the right ovary.

78.—This article has appeared in various journals and was abstracted in THE JOURNAL, xxxiii, p. 977.

84. **Fracture of the Femur.**—Davis describes the method of uniting a fracture of the neck of the femur by a straight incision down from the anterior superior spine of the ilium, being careful not to go so far down as to endanger any large blood-vessels or nerves, opening up between the capsule of the joint on its anterior surface between the two arms of the Y-ligaments and permitting the free entrance of the index finger and the use of instruments. This opening need not be closed before using the ivory pins to hold the fragments after getting them into position, leaving the pins in place. He thinks a still more efficient way would be to use a silver-plated screw. Two cases are reported; in the first he used steel pins, in the second, ivory pins were used with good results.

95. **Practical Hygiene.**—The subjects of tuberculosis, scarlet fever and typhoid fever form the chief theme of Hopkins' article. As regards tuberculosis, he maintains that Koch's discovery of its germ has been the most "hopeful gospel" to mankind for 1800 years, and he reiterates the usual instructions in regard to its prophylaxis. As regards typhoid fever, he says that this has become in New York state a rural disease due to insanitary conditions in the country districts, and calls attention to the necessity of better attention to sanitary conditions of the farms as well as to the farm products that come from them, which may carry the infection. As regards scarlet fever, he maintains that its infection is slight in the beginning, but becomes intense during the desquamative period and points out how, especially in country homes, isolation in this period should be secured.

96. **Nitrous Oxid Gas and Ether.**—Le Breton describes the Hewitt inhaler and Bennett modification and the Goldan apparatus, which has the advantages of simplicity and comparative cheapness. He calls attention to the practical points of rapidity in the transition from gas to ether and the necessity of not continuing the gas administration too long. The advantages are, comfort to the patient; freedom from excess of mucus and saliva; the smaller quantity of ether employed; the less liability of kidney complications on this account; the comparative cheapness of the combined method; the greater ease with which certain cases, alcoholics, especially, are anesthetized; the time saved, and the safety. The chief disadvantage is the cost and the bulkiness of the apparatus.

98. **Abuse of Quinin.**—The overusage of quinin by the laity is here deprecated by Church. He thinks the drug is given too much and it would be better if the laity knew less about it, as well as about morphin and some other drugs. He reviews the testimony as to the physiologic effect of quinin and names some of the evil consequences that sometimes have followed its use, such as blindness, headache, nervousness, etc. He says that quinin is contraindicated in inflammation of the middle ear and labyrinth, in renal irritation, in acute inflammation of the gastrointestinal tract and in still other cases it is not well borne.

99. **Nursing-Bottles.**—Wende's article points out the dangers of long-tube nursing-bottles and illustrates them by microscopic pictures showing the possibilities of infection by these long tubes.

102. **The Venom of Snakes.**—McFarland mentions the different kinds of venomous snakes inhabiting the United States, which are rattlesnakes, about twelve species, the moccasin and copperhead and the coral snake of the South. He describes the mechanism of their poisoning apparatus and the different effects of the poisons of different species. Usually the size of the animal has much to do with the seriousness of the injury, that by the copperhead and little ground rattler seldom producing general poisoning, though the local effects are usually marked. The various remedies are mentioned, especially antivenene, and in conclusion he says that, briefly outlined, the treatment of snake-bite is: 1. Immediate interruption of the circulation of the bitten member, so as to prevent absorption of the poison. 2. Free incision and enlargement of the fang-wound and forcible suction to extract the poison. 3. Hypodermic injection of three to six drops of a fresh water 10 per cent. solution of chlorid of calcium in about a dozen different areas about the wound. 4. Strychnia given hypodermically to stimulate the respiratory center. 5. Immediate and frequent repeated hypodermic injections of ten to 20 cubic centimeters of the antivenomous serum, or as Calmette calls it, "antivenene." The most urgent need of the patient is for immediate, unlimited administration of antivenene. It would be a wise precaution for persons who are in continual danger of snake-bites to provide themselves with this remedy and carry it with them.

103. **State Medical Examinations.**—The difficulties in the way of uniform state medical examinations and the common standard are noticed and Lewis mentions the objections to the present rules. He believes that it would be perhaps possible to secure reciprocity if the District of Columbia standard were generally adopted to meet all the conditions. Should the National Board of Health movement now under contemplation be successful, it might be best to utilize that body for this purpose.

113. **Gelatin Injections in Aneurysm.**—Four cases of aneurysm treated with gelatin injections are described by Nietert, and the conclusions drawn therefrom are stated as follows: 1. Great pain at site of injection often follows introduction of a large amount of the fluid. 2. The gelatin being a good medium for the development of micro-organisms, great care is required to keep it sterile. 3. The symptomatology is greatly improved in every case; the pain is usually lessened, the patient breathes easier and shows less pressure symptoms on important surrounding organs. 4. In most cases the tumor becomes more firm and expansibility less marked. 5. It is likely that great good can be effected by the gelatin injected in aneurysm of the smaller vessels. 6. Post-mortem examination in every case shows large organized clots, filling the cavity of the aneurysm, which are undoubtedly due in a great measure to the gelatin.

118.—This article has appeared elsewhere. See abstract in THE JOURNAL of July 29, ¶26, p. 257.

120. **Reflex Pelvic Neuroses.**—Robison details the elaborate nervous supply of the genital organs, describing the cervicouterine ganglion as the pelvic brain, giving its connections, and calling attention to the gastric, cardiac and other reflexes produced by the irritation of these parts.

123. **Convergent Strabismus.**—Bane emphasizes the importance of examining the eye at the earliest possible moment on the appearance of strabismus and the correction of any errors of refraction with spectacles, even if the child be but 2 years old; also the use of the occlusion pad in all suitable cases. Operation is advised as soon as there is positive evidence that further gain can not be made by the educative treatment.

125.—See abstract in THE JOURNAL of September 1, p. 578.

127.—Ibid., p. 577.

128.—Ibid.

129.—Ibid.

130.—Ibid., p. 578.

131.—Ibid., p. 577.

133.—Ibid., August 18, p. 447.

136.—**Digestion of Breads.**—The questions as to the dryness or moistness of bread eaten and the sterility from baking are discussed by Perry. He finds that there is no reason for ascribing gastric disorders to the presence of living bacteria, for the heat of baking in loaves of less than 2 pounds weight is enough (203 F.) to kill all gastric fermentation bacteria that may have been in the materials used. Those found in the London examination of Walsh were other innocent species and were found only in 4-pound loaves. The dryness of the bread with porosity, on which depends the amount of saliva which is absorbed in chewing is the main factor in determining the digestibility of the bread. If bread which is dry and porous is soaked in liquids before eating, or in the mouth while eating, its character of easy digestibility is taken away.

139. **Ergot.**—The physiologic action of ergot, as Seymour says, is to stimulate the vasomotor nerve-centers. Its action upon unstriped muscular fibers produces contraction of the blood-vessels and with the single exception of uterine hemorrhage, the arrest of non-traumatic bleeding is best effected by the induction of vasomotor paresis. The use of vasomotor excitants might be rational only if their action could be restricted to the immediate territory involved. We have been misled by taking uterine hemorrhage as the type of all hemorrhages in these cases. He has seen ergot produce a persistent diarrhea due to its action, undoubtedly, on the peristaltic muscles, yet it is often given for the control of intestinal hemorrhage. A protective clot stands a poor chance of adhesions under its grip. Its use in the cerebral or pulmonary bleedings is still more perilous. The blood-pressure within the cranium may be disastrously intensified and in pulmonary hemorrhage the increased vasomotor tension exaggerates the condition.

146.—**Pyorrhea Alveolaris.**—The relation of Riggs' disease to general surgery is here noticed by Abbott, who believes that it is responsible for many conditions, such as putrid exudates, etc. He mentions a case where this has developed extensive inflammation and septic infiltration of the lymphatics and glands of the floor of the mouth, the throat and the neck. In other cases it may produce antral disease, and he has heard of a case of cystitis which cleared up at once after the extraction of the diseased tooth. He asks what surgeon would allow his patient to take five or six drops of pus three or four times a day, yet this must be the case with sufferers from this disorder.

151. **Electric Light and the Eye.**—Roy reports a number of cases of irritation of the eye from the use of electric light, both arc and incandescent. The chief points of interest are whether the dangers produced are of chemical or traumatic origin, the presence of contraction of the pupils from retinal irritation persisting for days, and pain occurring several hours after the accident.

160. **Commercialism in Medicine.**—Armstrong gives his views as to the pervading spirit of commercialism as he sees it, and especially the need of modification of the Texas medical laws. He writes forcibly and as far as medicine is concerned, leaving out the politics and poetry, which may not agree with everybody, his views deserve general acceptation.

## FOREIGN.

### British Medical Journal, September 22.

**A Discussion on the Correlation Between Sexual Function, Insanity and Crime.**—The chief paper in this discussion is furnished by H. MACNAUGHTON-JONES, the distinguished gynecologist, whose conclusions are given as follows: 1. Functional disorders of ovulation are frequently attended by mental aberration, and in a proportion of cases originate the mental disturbance. The same remark applies to disorders of ovulation which have a pathological cause. 2. In the great majority of such cases, the nervous disturbance is of the neurasthenic character, and is associated with various visceral or other neuroses. In only a small proportion does the alienation assume so grave a type as melancholia, mania, or dementia. 3. Where in an insane person, ovulation and its external manifestation, the menstrual discharge, are erratic or absent, the erraticism or absence may be a consequence of the general and insane condition, and not a causal factor in its production; but under any circumstances such abnormal menstruation appears to have an aggravating effect on the insanity, and there is sufficient evidence to support the view that when such irregularity—especially if it be due to a pathological cause—exists, it should be treated therapeutically or by operative measures. 4. The question of a gynecological examination of an insane woman must be a matter for the discretion of the psychologist, influenced by the gynecological view as to its expediency from the signs and symptoms present in the sexual organs. For many reasons, as a universal practice, with our present knowledge it is not advisable. 5. Sufficient evidence is now advanced to justify the removal of the adnexa or uterus in insane women, when there are gross lesions of the former or tumors of the latter. Here, again, such operation must be advised according to the psychological condition of the patient and the type of her insanity. 6. From a mass of evidence, including some of the largest experiences in Europe, Canada, and America, it does not appear that there is in healthfully-minded women, who suffer from diseases of the genitalia, any special risk of post-operative insanity. On the other hand, if there be a psychopathic predisposition, which had existed prior to and independently of the sexual disease, there is in such cases a larger percentage of post-operative mental disturbance than follows other operations. In such women the prudence of a radical operation may have to be carefully discussed. The post-operative mental effect does not appear generally to be of a serious or permanent nature. 7. It may be generally affirmed that when mental disease of a graver type follows upon sexual disorder there has been in the woman affected an underlying and often unrecognized psychopathic predisposition; the disorder of the menstruation or the disease in the genitalia completing the chain of the vicious circle needful for the final manifestation of the mental condition. 8. The relation of aberrant sexual function or a disorder of menstruation to any criminal act ought to be taken into consideration in determining the responsibility of the women.

**Acute Delirious Mania.** JOHN TURNER.—Turner recognizes three divisions of acute delirious mania: 1. Those of alcoholic origin. 2. Those of septic origin. 3. Those in which we are not able at present to identify any particular poison as the cause. It is the latter form that the author chiefly treats of in this article. The main point to which he calls attention is that the most of these cases present definite alterations of certain of the cortical nerve cells—chiefly the giant cells of Betz—so much so that they are almost characteristic. He says *almost*, because in at least once case he was not able to find this change though other cells showed pronounced changes. He remarks on the symptoms, reports cases, and figures the changes that he has observed. The naked-eye appearances consist chiefly in intensely congested areas in the meninges and sometimes thrombosis and hemorrhage. From his study he believes that all forms of acute delirious mania are of toxic origin, but while some are obviously caused by the introduction of poison from without or the absorption of certain matters there is a third class due to auto-intoxication, probably from perverted metabolism which is probably caused by a disordered

nervous system. In these acute cases occurring in the prime of life we almost always meet with fatty degeneration of the liver, an organ one of whose functions is probably to prevent the introduction into the system of poisonous intestinal products. It may be asked why some nerve-cells suffer while others in their neighborhood escape. It may be, he says, that these particular cells, which are chiefly concerned in the production of the symptoms are those which will feel the chief effect of the poison. If, as some hold, accumulation of pigment in the nerve-cells is an expression of past and probably recent activity, the fact that the cells which are most pigmented are usually those most affected will bear out this contention. The subject is, however, as yet too speculative for beneficial discussion. The cells just described are found here and there in many other forms of insanity with different clinical histories and even in some cases of acute delirious mania only a minor proportion of the giant cells are markedly affected. As a rule, however, in cases with high delirium and a rapidly fatal termination we generally meet with a condition in which all the giant cells are profoundly altered and the author believes from an inspection of such a section a diagnosis can be formed of the mental condition preceding death.

**Organo-Therapeutics in Mental Diseases.** C. C. EASTERBROOK.—The origin of organo-therapeutics dates from Brown-Séquard's experiments in 1889 and the doctrine of internal secretion formulated by him that "all glands and all tissues have an internal secretion and all injected subcutaneously have a tonic effect" is taken as the text of this article. During the past five or six years Easterbrook has administered in various forms of insanity extracts of the following animal organs: The thyroid gland, the parathyroid bodies, the thymus, the pituitary body, the brain, the choroid plexus, the spleen, the suprarenal bodies, the testes, the ovaries, the uterus, and the mammæ. With the exception of the thyroid, none of these have been very generally employed by alienists, and parathyroid extract so far as he knows has not been employed before at all. He carefully selected his cases among patients not progressing toward recovery under other treatment, and sought to avoid the fallacies of calling temporary remissions recoveries, or to attribute to the drug any improvement or change that might be due naturally to the course of the disease and he has also excluded all psycho-therapeutic influences in any form so far as possible. His patients were first weighed and put to bed on a diet sufficient to maintain the body temperature and body weight, careful notes made of the state of the bodily and mental functions, the excretions, the blood, urine, etc., with careful quantitive and qualitative examinations and microscopic studies. Sphygmographic tracings, and observations of the blood-pressure with sphygmometer were also made in some cases. In the 130 cases tested with the thyroid extract, including a large number of forms of insanity and almost the whole range of symptoms of the disease, large and small doses were given separately and effects noted as producing changes in the temperature, circulation, nervous system, urine, etc. Small and moderate doses were tolerated well by all. Large doses were badly borne by those under 20 and over 60 years. Easterbrook suggests that, in the old, the thyroid gland is feebly functional and the system is not prepared for much thyroid secretion, while in the young it is freely active and the system well supplied, therefore any addition is superfluous. In the 130 cases there are 12 recoveries which he thinks can be attributed to the drug and 29 cases were improved. All the recovered cases had been selected as failures from former treatment, the average duration of treatment before thyroid medication having been eight months. Several cases that had been treated, recovered some time after, which indicates that a patient not cured by the thyroid method may still recover by other means. Nevertheless his experience is that if the patient is going to recover under this drug it will be done with the first few large doses. When used in chronic insanity temporary improvement is common and he has found it useful in aborting periodic attacks of violence. The therapeutic effects of parathyroid were negative, the same is true as regards mental symptoms with thymus and pituitary extracts, though there was in some cases temporary improvement with both. Brain extract was used in 19 cases, of which 2 recovered and 3 were improved. Choroid plexus extract was negative in its results. Suprarenal extract he thinks had some effect in increasing the blood-pressure and he would advise a systematic trial in maniacal cases. It seems also to produce a specific diminution of tissue oxidation. With the splenic extract there was in two cases temporary improvement physically and mentally with subsequent relapse. Of the 8 cases treated with orchitic extract 3 were improved mentally while 2 others were physically benefited. Thirty-six cases were treated with the ovarian extract, 2 of the patients recovered long after the treatment, probably independently of it and 4 cases, mainly stuporous, were improved. Two of the patients in whom the ovaries had been extracted or destroyed by disease were unimproved either mentally and physically by large doses. Uterine extract was negative. The 2 cases treated by the mammary extract were affected with a rise in temperature and loss in weight, but no change in other respects; both however fully recovered, one after a careful thyroid treatment. In conclusion, he states that Brown-Séquard's generalization needs some modification. His own investigation led him to conclude that those animal extracts which consist mainly of simple proteids and albuminoids have merely a dietetic value, but those that are rich in nucleins and nuclein proteids produce when given in sufficient doses a temporary stimulation of cell katabolism and subsequent anabolic reaction. It is important to recognize this tonic effect. Apart from this it is extremely doubtful whether each organ possesses a specific internal secretion in the sense intended by Brown-Séquard. Some organs, however, as the thyroid with its iodothyrin and the suprarenal bodies with their active principle have a decided special effect. Thyroid extract stands far and above all others in stimulating tissue oxidation, and anabolic reaction never sets in until after the cessation of the drug, which is not the case with other extracts.

**Revue de Medicine (Paris), July and August.**

**Affections of the Spinal Cord in Heredo-Syphilitic Infants.** DE PETERS.—In certain cases symptoms indicating an affection of the spinal cord are the only means of diagnosing inherited syphilis. De Peters has observed eleven such instances. Nothing suggested syphilis in either parents or children except the nervous symptoms and the fact that they yielded promptly to specific treatment. In some cases there was isolated paralysis of the muscles of the scapular region, isolated paresis of the leg, isolated contraction of a group of muscles, as, for example, the psoas and iliac muscles, or those of the back of the neck, coexisting with paralysis of other muscles, or the oculo-pupilary Dejérine-Klumpke symptom alone. In differentiating this from obstetrical paralysis, an important point is that the latter is more apt to occur in well-developed children born at term and that it is usually unilateral.

**Acute Dysenteric Hepatitis.** P. REMLINGER.—The acute non-suppurative hepatitis accompanying dysentery commences during or consecutive to the latter—eighteen months after in one of the four cases described, and nine years in another, after the first manifestations of the recurring dysentery. The onset is sudden and violent. Morphin is powerless to relieve the intense pain. The liver appears hypertrophied all over, the spleen normal. Ordinary treatment is ineffectual, but local blood-letting is followed by almost immediate relief.

**August.**

**Gastrointestinal Troubles from Nervousness.** DUBOIS.—No organ is so sensitive to the emotions as the gastrointestinal canal. It is the mirror of the condition of our soul, Dubois asserts. Pavloff showed that a dog secreted as much gastric juice at the sight of his dinner on a dish as another dog given 100 gm. of meat. This demonstration of a "psychic appetite" has been supplemented by Kronecker's recent experiments proving the effect of fear on peristalsis. The influence of massage and exercise was evidenced in the passage of a silver ball through the isolated intestine of a dog by increased peristalsis. A threatened beating, however, sent the ball along more rapidly than all the physical measures combined. A number of typical cases of nervous gastrointestinal affections are de-

scribed in this communication and the benefits to be derived from measures to educate the will, control the reason and train the intestines, combat the nervous preoccupation and divert the patient's attention, are emphasized. Medication is useless in these cases.

**Berliner Klinische Wochenschrift, August 27, September 3 and 10.**

**Peculiar Dangers of Otitis in Elderly People.** Heine.—With advancing years osteosclerosis of the mastoid process frequently occurs, but is usually confined to the external portion, while the internal portion of the temporal bone retains its spongy character. For this reason suppurative processes do not readily work outward, while serious lesions may be progressing in the depths. Four instructive cases are described, forcing the conclusion that patients over 40 with inflammation of the middle ear should be operated on as promptly as possible, otherwise rapidly fatal cerebral complications are liable to supervene.

**Adjustable Spectacle Frame.** L. Sarason.—To prevent myopic school-children from using distance glasses for near work, the lenses are suspended in the frame from the top. They consequently swing outward out of the line of vision whenever the head is bent forward.

**September 3.**

**Injuries from Lime in the Eye.** Schmidt-Rimpler.—A 100-gm. syringe and a bottle of oil should be kept where lime is being used. In case of an injury to the eye from the lime the oil should be injected from the external angle and the eye well irrigated with it.

**September 10.**

**Harmful Suggestion in Accident Cases.** W. Seiffer.—The writer of this communication is assistant at the Nerven-Klinik of the Berlin Charité, and describes from his personal experience the vast harm done by physicians in expressing an unfavorable prognosis on the first examination of a patient after an accident. He attaches the utmost importance to the physician's verdict at such times and requires a tonic, psychic treatment, suggestion of rapid recovery, while a grave prognosis announced is liable to increase the gravity of the traumatism. His cases of more or less conscious simulation, traumatic hypochondria and hysterical paralysis, lead him to endorse Bruns' statement that traumatic nervous affections are due far more to subsequent events and emotions than to the trauma itself. He therefore begs physicians to weigh their words well at such times and to err, if they err at all, on the side of a too favorable prognosis.

**How to Secure Asepsis in Catheterization of Ureters.** M. Katzenstein.—Tests at Israel's surgical clinic have conclusively demonstrated that it is impossible to sterilize catheters thoroughly with sublimate, while other processes are liable to injure the catheters, and disinfection with formaldehyde has been tedious and insufficient hitherto. Katzenstein has constructed an improved apparatus which consists of a tall metal box 17 cm. long, 11 cm. high and only 2.5 cm. deep, on the floor of which tri-oxy-methylen—which is nothing but polymerized formaldehyde—is scattered. The back of the box is pierced with a dozen small openings containing each a small tube, terminating on the outside with a screw-thread on which a cap or a catheter is screwed. An oblong metal box of the same width and height, but 44 cm. long, fits on the gas chamber above-described and supports the catheters on a wire tray. The gas generated in the small chamber has no means of escape except through the catheters screwed on the tubes opening into it, which are thus rendered sterile in ten minutes. Ureteral catheters only require twenty minutes at most. The large box is made in two halves that telescope, so that it can be drawn out to a length of 80 cm. The heat is supplied by three small gas jets, raising the temperature to 60 or 80 C. in the generating chamber. Catheters are not injured by this process. A small pocket apparatus is made on the same principle, the heat supplied by a thermophore attachment.

**Success of Chirol "Varnish Gloves."** R. Kossmann.—The hands are first thoroughly sterilized and then dipped for fifteen seconds—no longer—in the fluid chirol. They dry in three minutes and neither sweat nor germs can pass through these varnished gloves from within nor germs nor fluids from without. Kossmann describes a number of tests in which the fingers were rubbed on cultures of bacillus pyocyaneus and prodigiosus and then pressed and rubbed three times on a plate of agar. They were then dipped in the chirol without sterilization and pressed again on the agar a number of times. Not a single culture developed after the chirol had been applied while numerous colonies grew at each one of the three points first touched. Even without preliminary sterilization, the value of chirol in preventing infection promises to be inestimable, because it plugs up all the crevices and nail-spaces.

**Deutsche Medicinische Wochenschrift (Leipsic), September 22.**

**The Neuron in Anatomy and Physiology.** M. Verworn. This summary of the facts on which the neuron theory is founded was presented at the Congress of Physicians and Naturalists which met at Aix-la-Chapelle, September 19. Nissl believes that the theory of the neuron as a unit is untenable, but Verworn claims that all the latest researches have merely confirmed this theory. He admits that the neuron is not the same thing everywhere that we see in Golgi's pictures of the cells of the anterior cornua. The neuron is of many varieties and shapes, according to its location and its function, as Nature never works by an exact pattern. Modern research has led to the further and freer evolution of the conception of the neuron as a cellular unit. He reports experiments which show that the metabolism in the central nerve-centers is incomparably more intense than in the peripheral nerves, also that the centers pass through stages of fatigue and exhaustion the same as the muscles; fatigue from autointoxication and exhaustion from using up the reserve supplies, especially of oxygen. His pupil, Baglioni, is soon to publish an account of researches which show that strychnin injected into the spinal cord affects exclusively the sensory elements of the posterior horns, increasing their excitability to an enormous degree, while carbolic acid in certain solutions affects merely the motor elements of the anterior horns, increasing their excitability.

**Reposition of Luxated Shoulder by Riedel's Method.** Graef.—It is amazing, Graef observes, after years of experience with the old and frequently unreliable method of traction by four men on the upstretched arm, to see the ease and rapidity with which a severe anterior luxation of the shoulder can be reduced by Riedel's method. Narcosis is indispensable. The muscles prevent the entrance of the head into its socket, but once relaxed by complete narcosis, the head is held only by the tendon connecting the acromion and the middle portion of the humerus. If the arm in extreme adduction is then pulled from below diagonally across the body toward the sound side of the pelvis, the head slips easily and immediately into place.

**Another Toe-Finger.** Eiselsberg.—The right forefinger of a young man had been cut off four months before the operation described. Eiselsberg applied in its place the second toe, leaving it still attached to the foot by a portion of the soft parts, and applying a plaster cast. The connecting bridge was gradually severed and completely divided by the twelfth day. None of the toe was lost and sensibility has developed; mobility has not yet appeared, but is confidently expected in time, as occurred in Nicoladoni's toe-finger operation two years ago.

**Acute Progressive Peritonitis Cured by Operation.** Urban.—Two children 3 and 3½ years old, respectively, with severe progressive peritonitis, one apparently moribund, were treated by incising the abdomen on the median line for 6 to 8 cm., nine and four days after commencement of the disease. The wound was not irrigated nor drained but was left open and dry dressings were applied. Improvement commenced at once, and went on to recovery.

**Mittheilungen a. d. Grenzgebieten der Med. u. Chir. (Jena), vi, 4 and 5.**

**Experimental Production of Gall-Stones.** H. Miyake.—Introducing foreign bodies or cauterizing the mucosa, etc., never led to the production of a true calculus in the experimental research reported. Infection proved to be an indispensable factor, with the consecutive chronic catarrh of the

biliary passages, combined with means to prevent expulsion of the stones.

**Omentum Tumors.** R. BORRMANN.—In studying the published descriptions of "omentum tumors" the statement is always found that a portion of the tumor was adherent at some point to the stomach or colon. Borrmann claims that the tumor originally developed from the organ to which it is adherent and grew between the layers of the omentum.

**Technique of Esophagoscopy.** G. GOTTSTEIN.—According to the technique employed at Mikulicz' clinic the patient reclines on his right side on a table, the head slightly drawn back, the physician seated on a low chair at his head. The tongue and entrance to the esophagus are swabbed with a 10 per cent. solution of cocain. Once past the entrance, the esophagus offers no further obstacle to the passage of the tube, but it may require considerable gentle manipulations to enter it. A Casper panelectroscope is then applied. Esophagoscopy is no more dangerous than any other procedure of the kind.

**Muenchener Medicinische Wochenschrift, September 18**

**Gout in Germany.** A. STRUEMPELL.—The Germans have always claimed that gout was rare in their country, but Struempell states that it is frequently encountered now and that the failure to note it before was due to the lack of search for it. The majority of patients he has observed were connected with the manufacture or sale of beer, or had been exposed to lead-poisoning.

**Inflammation of the Gall-Bladder and Consecutive Gastrointestinal Disturbances.** W. FLEINER.—The writer recommends flushing the stomach with tepid water and rectal injections of oil as effective means of combating the gastrointestinal disturbances left after an acute cholecystitis. The oil actively promotes peristalsis and proves a powerful cholagogue. Irrigating the fasting stomach rinses out the whole organism, especially the liver, as a portion of the water is absorbed by the portal vein and carried directly to the liver. He extols these systematic flushings of the stomach as fully equal to a course at Carlsbad, and even more effective in certain cases, while they can be carried out at any time and are not restricted to the watering-place season. They exert a gymnastic influence on the gall-bladder as well, preventing the formation of adhesions between it and the stomach, and thus curing many a case of motor insufficiency of the stomach from this cause. A tendency to hemorrhage on the part of the gastric mucosa is a counterindication for lavage.

**Acute Lukemia.** A. DENNING.—A case is described in which an otherwise typical lymphatic leukemia or lymphemia was not accompanied by any perceptible alteration or swelling of the glands, and the spleen and liver did not become hypertrophied until the last stages of the disease. The condition of the gums and mouth suggested scorbutus. This emphasizes the necessity of examination of the blood in every case of stomatitis of unknown origin.

**Gas Gangrene.** G. MUSCATELLO.—Five cases are described of local gangrene with gas formation and symptoms of general intoxication, only differing by the complication with inflammatory processes which was observed in a few, and by a tendency to the invasion of the surrounding sound tissue in connection with the inflammatory processes. The bacillus aerogenes capsulatus was found in three cases. It evidently has no action on sound, but primarily invades altered tissues. The bacillus coli communis was found associated with the proteus in one, and with the streptococcus in another case. All the patients recovered, three after amputation of the arm, leg or thigh in which the infection had developed after a traumatism—stab wound or compound fracture. In another case the gangrene developed consecutive to abdominal extraperitoneal nephrectomy. The wound apparently healed but required reopening on account of swelling and fluctuation. The walls of the cavity were found brown and soft, with gas bubbles in them and in the adjacent lumbar muscles. Energetic disinfection with potassium permanganate and iodin arrested the gangrene and the patient recovered. It appeared in another patient after removal of an arterio-venous aneurysm in the popliteal space requiring ligature of the artery above and below. The gangrene also invaded the stump two days after amputation, but was cured by reopening the wound and vigorous disinfection and medicinal measures every four hours. The popliteal vein in the amputated limb was found obstructed with a thrombus at the point of the lower ligature. The gangrene extended to the point of the upper ligature, where it ended abruptly in the midst of sound tissue. The bacillus aerogenes was found pure in the two last cases.

**Therapie der Gegenwart (Berlin), July and August.**

**Lumbar Puncture in Children.** O. KOHTS—Temporary improvement was observed in several cases of tubercular meningitis, but Kohts' personal experience confirms the danger of the procedure in case of cerebral tumor or pronounced spina bifida. His experience with it in cerebrospinal meningitis was decidedly favorable. Four have survived out of the seven cases in which lumbar puncture was applied, including two who recovered completely and one who was left somewhat deaf. Netter has also reported five recoveries out of six.

**Cinnamic Acid and Leucocytosis in Tuberculosis.** C. KRAEMER.—Ten clinicians have published their experiences with cinnamic acid in the treatment of tuberculosis. The general verdict on the total of 186 patients is favorable to the remedy, and experimental research has established that its action is due to the leucocytosis which it induces. The leucocytes wall off the tubercle and in time lead to its transformation or encapsulation. Other substances induce leucocytosis but none combines such purity, solubility and non-toxicity with such efficiency in even the smallest amounts.

**Origin of Catarrhal Conditions of the Respiratory Passages.** ADLER.—The theory proposed to explain hay-fever and the non-infectious catarrhs of spring and fall, and of elderly people during the winter, assumes that the membranous lining of the upper air-passages has a different coat for summer and winter. Abrupt transition of the seasons causes this coat to be thrown off rapidly and a catarrhal condition results. Some persons are incapable of forming a suitable epithelial coat for winter weather. In others the summer coat is defective and the light, odors and floating particles of dust and pollen irritate the membrane, culminating in hay-fever. All these conditions are based on insufficiency of the epithelium and preventive treatment should be formulated accordingly.

**August.**

**Treatment of Sciatica with External Application of Hydrochloric Acid.** ELJASZ-RADZIKOWSKI. Twelve cases of very severe and rebellious neuralgia, some of neuritic and some of scoliotic origin, were all cured by painting the painful region with 20 gm. of pure hydrochloric acid at a time, in four to eleven applications. In one of the cases the patient was so much improved by one application that he did not return for further treatment. As the acid penetrates into the tissues it is transformed into a harmless chlorid.

**Treatment of Pulmonary Tuberculosis with Igazol.** V. CERVELLO.—Fifty-five patients have been treated with igazol since its invention fifteen months ago and 15 are now completely cured—appetite, strength, color and weight restored to normal. These include 5 in the first stages, 1 quite severely affected, 7 severely affected, and 2 very severely affected. The temperature had varied from 37.5 to 38.5 C. in 6 and in 3 between 38.9 and 39.5. Fourteen are nearly cured, including 6 severely and 2 very severely affected. The temperature in 5 was 35.5 to 38.5, and in 3 was 39 to 40. Ten of the whole number were slightly improved: 5 grew worse; 1 remained stationary and 10 have died. Even in incurable cases there is always a pause or temporary improvement in the disease. The fever vanishes in ten to sixty-four days; the effect on the sputa is evident almost from the first. The appetite and general health also rapidly improve. (See THE JOURNAL xxxii, p. 1438.)

**Wiener Medicinische Wochenschrift, August 25**

**Treatment of Ulcers with Superheated Air.** K. ULLMANN.—The heated air is brought from a lamp on the floor

through a tube into a large, bulging air-chamber with a comparatively small opening at the farther end, which fits close against the region of the ulcer, and is fastened with straps around the trunk. Most of the 50 cases Ullmann has treated in this way were old venereal ulcerations. In 19 cases of chancre the lesion was cured in four to five sittings together with phimosis when it existed. The most brilliant results were obtained in cases of phagedenic ulcerative processes of specific or non-specific nature. In two severe cases, the lesion on the glans penis had resisted all treatment for a year, but rapidly yielded to the dry, hot air. Its action was truly wonderful. Ullmann exclaims, on extensive and hard primary lesions or gummata. The only failure was one fistulous process in the scrotum, which was not improved.

**Archivio di Psichiatria (Turin), xxi, 3.**

**The Hair in Degenerates.** L. Battistelli.—Examination of 1000 subjects showed the great preponderance of the low and circular growth of the hair on the forehead, in degenerates, the aberrations and plurality of the vertices, the greater intensity and frequency of the atavistic erection of the hair under the influence of fright, and its greater resistance and vitality.

**The Potential of Criminality.** R. de la Grasserie.—A normal person may commit a crime by exceeding the limits of legitimate self-defense; there is criminality but no criminal. The born criminal may not have committed a crime; there is the criminal but no criminality. Between these two extremes are the persons who commit crimes from example, or on account of depraved environment. The first group should not be punished at all, except for the effect on the gallery. The second group is incorrigible and a permanent peril to society, against which all means of defense are justifiable. The third class is susceptible of improvement and a return to normal with new and elevating surroundings. Repetition of the specific crime and study of previous arrests are the chief means of detecting the born criminal, supplemented by anatomic and physiologic investigation, including his heredity.

**Gaceta Medica (Mexico), September 15.**

**Retractor for Soft Parts in Amputations.** J. Vertiz.—Two thin metal plates cut out in the shape of a very long and broad U are superposed, the ends reversed. The under plate has the edges turned up to form grooves in which the upper one slides into place, when the plates are applied to enclose the bone in the round hole left in the center between the concave portions of the superposed U-plates. The retractor is operated by a strip of gauze passed through a slit at each end.

**Semana Medica (Buenos Ayres), August 23.**

**Subarachnoid Injections of Cocain.** B. Podesta.—Grave operations on twenty-one patients were performed with anesthesia from intraspinal cocainization according to Tuffier's directions, injecting from 15 to 20 mg. of cocain in a 2 per cent. solution. There was slight headache for the following twelve to thirty-six hours in only five. None of the others experienced inconveniences of any importance. There was no nausea in any instance. Some of the patients had cardiac or pulmonary affections. All but one were men between 17 and 49. Ten of the operations were for inguinal hernia. The remainder included a vaginal hysterectomy, two laparotomies, stretching the sciatic nerve, removal of hydatid cyst of the liver, a tenotomy, costotomy for a purulent hemothorax consecutive to a stab wound of the lung, etc.

## Change of Address.

C. Bell, Washington, to 418 South Broad St., Philadelphia, Pa.
B. B. Brashear, Concord, to South Lancaster, Mass.
C. M. Braidwood, Lapeer, to Elba, Mich.
A. J. Black, St. Louis, to Wilton, Mo.
John Curwen, Warren, to 325 N. Front St., Harrisburg, Pa.
C. S. Hosmer, Nephi, Utah, to 406 E. Liberty St., Ann Arbor, Mich.
J. T. Hubel, 495 Gratiot Ave., to 460 Brush St., Detroit, Mich.
Elmer Lee, 9 W. 45th St., to 127 W. 58th St., New York City.
E. H. Moore, Whitehouse Station, N. J., to N. Y. Post-Graduate Med. School, New York City.
J. H. F. Mullett, 1312 Geddes Ave., to 210 13th St., Ann Arbor, Mich.
A. L. McNay, Gray Summit, to Pacific, Mo.
R. G. Olson, Muskegon, Mich., to 948 S. Robey St., Chicago.
E. G. Randall, Oneida to Waterville, N. Y.
C. J. Roberts, Warren Tavern, to Malvern, Pa.
J. R. Scott, Appleton, to Hortonville, Wis.
W. J. Swartz, 93 Cambridge St., St. Paul, to 2604 Bloomington Ave., Minneapolis, Minn
O. Tydings, Piqua, O., to 225 Dearborn Ave., Chicago, Ill.
W. J. Taylor, 121 S. 18th St., to 1825 Pine St., Philadelphia, Pa.

## Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington D. C., Sept. 20 to 26, 1900, inclusive:

Edward Barry, acting asst.-surgeon, from Fort Wadsworth, N. Y., to San Francisco, Cal., en route to Manila, P. I., for duty in the Division of the Philippines.

W. Fitzhugh Conter, major and surgeon, U. S. A., leave of absence granted.

George E. Chamberlain, acting asst.-surgeon, from South Newbury, Vt., to San Francisco, Cal., for duty with troops going to the Philippine Islands.

Weston P. Chamberlain, lieutenant and asst.-surgeon, U. S. A., relieved from duty in the Division of the Philippines, to proceed to San Francisco, Cal., and report by letter to the surgeon-general.

Jere B. Clayton, lieutenant and asst.-surgeon, U. S. A., from Vancouver Barracks, Wash., to Fort Myer, Va.

Marshall M. Cloud, lieutenant and asst.-surgeon, U. S. A., sick leave granted.

James B. Ferguson, acting asst.-surgeon, leave of absence granted.

William M. Hendrickson, acting asst.-surgeon, from Fort McDowell, Cal., to Fort Flagler, Wash.

James H. Hepburn, acting asst.-surgeon, leave of absence granted.

James H. Hysell, major and surgeon, Vols., relieved from duty in the Department of Eastern Cuba, to report to the surgeon-general at Washington, D. C.

Thomas J. Kirkpatrick, lieutenant and asst.-surgeon, U. S. A., from Fort Myer, Va., to Fort Barrancas, Fla.

William J. Lyster, acting asst.-surgeon, leave of absence extended.

Champe C. McCulloch, Jr., captain and asst.-surgeon, U. S. A., from Fort Barrancas, Fla., to San Francisco, Cal., en route to Manila, for duty in the Division of the Philippines.

John L. Nicholson, acting asst.-surgeon, from Dorchester, Mass., to San Francisco, Cal., for duty with troops going to the Philippine Islands.

Henry Page, lieutenant and asst.-surgeon, U. S. A., relieved from duty in the Division of the Philippines, to proceed from San Francisco, Cal., to Plattsburg Barracks, N. Y., for duty at that post.

William H. Spiller, acting asst.-surgeon, from the transport *Grant* to duty on the transport *Hancock*.

William T. Tanner, acting asst.-surgeon, from Fort Myer, Va., to duty at Fort Wadsworth, N. Y.

Stephen Wythe, acting asst.-surgeon, from Fort Flagler, Wash., to San Francisco, Cal., for assignment to duty in the transport service.

ASSIGNMENTS.

On September 26, 1900, the following assignments of medical officers of volunteers to the organizations and upon the dates specified after their respective names, as they appear of record in the War Department, were published:

Maj. John R. Hereford, surgeon, Jan. 26, 1900; Capt. William H. Cook, asst.-surgeon, Jan. 26, 1900; First Lieut. Frank W. Dudley, asst.-surgeon, Jan. 27, 1900, to the 32d U. S. Vol. Inf.

First Lieut. Raphael A. Edmonston, asst.-surgeon, Mar. 1, 1900; First Lieut. H. Brookman Wilkinson, asst.-surgeon, June 16, 1900, to the 34th U. S. Vol. Inf.

Maj. Eugene L. Swift, surgeon, Nov. 12, 1899; Maj. Luther P. Grandy, surgeon, Mar. 9, 1900; Capt. John A. Metzger, asst.-surgeon, Mar. 9, 1900; First Lieut. John Carling, asst.-surgeon, Mar. 9, 1900, to the 35th U. S. Vol. Inf.

Maj. Paul F. Straub, surgeon, July 12, 1899, to the 36th U. S. Vol. Inf.

First Lieut. Edward D. Sinks, asst.-surgeon, Aug. 14, 1899, to the 37th U. S. Vol. Inf.

First Lieut. George S. Wallace, asst.-surgeon, Aug. 30, 1900, to the 42d U. S. Vol. Inf.

Maj. Frank E. Artaud, surgeon, July 24, 1900; Capt. William C. Berlin, asst.-surgeon, July 30, 1900, to the 45th U. S. Vol. Inf.

Maj. Charles F. Kieffer, surgeon, Sept. 12, 1899; Capt. Howard A. Grube, asst.-surgeon, Sept. 12, 1899; First Lieut. William W. Purnell, asst.-surgeon, Sept. 13, 1899, to the 48th U. S. Vol Inf.

Maj. Robert Burns, surgeon, June 24, 1900; Capt. William C. Warmsley, asst.-surgeon, June 28, 1900; First Lieut. Joseph H. Carroll, asst.-surgeon, June 14, 1900, to the 49th U. S. Vol. Inf.

Maj. Alexander D. Ghiselin, surgeon, April 4, 1900; Capt. Shadworth O. Beasley, asst.-surgeon, April 4, 1900; First Lieut. Stanley MacC. Stuart, asst.-surgeon, April 4, 1900, to the 11th U. S. Vol. Cav.

Capt. José Lugo-Vina, asst.-surgeon, Mar. 28, 1900; First Lieut. Gustave Moret, asst.-surgeon, April 21, 1900, to the Porto Rico Regt.

Capt. Maxwell S. Simpson, asst.-surgeon, June 1, 1900, to the Squad. Phil. Cav.

## Navy Changes.

Changes in the Medical Corps of the U. S. Navy for the two weeks ending Sept. 29, 1900:

Surgeon C. T. Hibbett, detached from the Cavite naval station and ordered to the *Newark*.

Surgeon O. D. Norton, detached from duty with the marine regiment in China and ordered to the *Monadnock*.

Asst.-Surgeon F. L. Benton, detached from the naval hospital, Cavite, P. I., and ordered to the *Brooklyn*.

Medical Director J. A. Hawke, detached from the New York navy yard and ordered to duty at the naval hospital, Mare Island, Cal.

Medical Inspector G. P. Bradley, detached from the naval hospital, Mare Island, Cal., on reporting of relief, and ordered home and to wait orders.

P. A. Surgeon G. D. Costigan detached from the *Newark* and ordered to the *Yorktown*.

Asst.-Surgeon E. Davis detached from the *Yorktown* and ordered to the Cavite naval station.

Asst.-Surgeon M. K. Elmer detached from Boston navy yard and ordered to accompany battalion of marines to Mare Island, then to duty on the *Ranger*.

Asst.-Surgeon J. C. Thompson detached from the *Newark* on reporting of relief, proceed home and wait orders.

Asst.-Surgeon W. B. Grove, ordered to duty on the *Vermont*.

Asst.-Surgeon H. E. Odell, detached from the *Ranger* on reporting of relief and ordered to Asiatic station with battalion of marines for duty as relief of Asst.-Surgeon J. C. Thompson.

Surgeon B. F. Stephenson, detached from the *Baltimore* when out of commission; ordered to examination for promotion at Washington yard, thence home and wait orders.

Asst.-Surgeon W. H. Bell, relieved from additional duty at Norfolk Hospital and ordered to continue duty on the *Vixen*.

Asst.-Surgeon H. A. Dunn, previous orders modified, ordered to report for duty on *Dorothea*, instead of proceeding home.

Asst.-Surgeon K. Ohnesorg, detached from the naval academy and ordered to the *Vicksburg*.

Asst.-Surgeon A. Stuart, detached from the *Fortune* and ordered to resume duties on the *Yankton*.

Asst.-Surgeon E. V. Armstrong, ordered to report to commandant of New York yard for duty on the *Vermont*.

Medical Director C. U. Gravatt, commissioned medical director from August 24.

Surgeon G. B. Wilson, commissioned surgeon from February 7.

Pharmacist R. Waggener, ordered to duty at naval proving grounds, Indian Head, Md.

## Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Aug. 10, 1900:

SMALLPOX—UNITED STATES.

Alaska: Port Safety Aug. 25; reported.

Colorado: Aug. 9-Sept. 11; Arapahoe County, 3 at Denver; El Paso County, 2; Fremont County, 3; Garfield County, 3; Glenwood Springs, 2; Huerfano County, 3; Las Animas County, 4; Pueblo County, 21.

Louisiana: New Orleans, Sept. 15-22, 6 cases, 2 deaths.

Michigan: Houghton, Sept. 8-15, 2 cases; Torch Lake, Sept. 8-15; 2 cases.

Ohio: Cleveland, Sept. 15-22, 6 cases.

Utah: Salt Lake City, Sept. 15-22, 3 cases.

Wisconsin: Sept. 18, Ashfield County, present; Bayfield County, present; Dane County, present; Eau Clair County, present.

SMALLPOX—FOREIGN.

Austria: Prague, Sept. 1-8, 1 case.

Belgium: Ghent, Sept. 8-15, 1 death.

Egypt: Alexandria, Aug. 28-Sept. 3, 1 case; Cairo, Aug. 18-26, 3 cases.

England: Liverpool, Sept. 1-8, 3 cases.

France: Lyons, Aug. 25-Sept. 1; 2 deaths; Paris, Sept. 1-8, 5 deaths.

India: Bombay, Aug. 21-28, 2 deaths; Calcutta, Aug. 11-26, 18 deaths; Madras, Aug. 11-24, 2 deaths.

Mexico: Vera Cruz, Sept. 8-15, 4 deaths.

Russia: Moscow, Aug. 25-Sept. 1, 1 death; Odessa, Aug. 25-Sept. 8, 7 cases, 1 death; Warsaw, Aug. 25-Sept. 1, 5 deaths.

Scotland: Dundee, Aug. 25-Sept. 1, 2 cases; Glasgow, Sept. 7-14, 31 cases.

Spain: Madrid, Aug. 11-Sept. 1, 111 cases.

YELLOW FEVER.

Cuba: Cienfuegos, Sept. 22, 1 case; Havana, Sept. 8-15, 9 deaths.

Mexico: Vera Cruz, Sept. 8-15, 15 deaths.

PLAGUE—FOREIGN.

India: Bombay, Aug. 21-28, 64 deaths; Calcutta, Aug. 11-25, 136 deaths.

Scotland: Glasgow, Aug. 31-Sept. 14, 16 cases, 1 death.

CHOLERA.

India: Bombay, Aug. 21-28, 408 deaths; Calcutta, Aug. 11-25, 29 deaths; Karachi, Aug. 19-29, 13 deaths; Madras, Aug. 18-24, 37 deaths.

Japan: Yokohama, Aug. 25-Sept. 1, 1 case.


# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

61 Market Street : : Chicago, Ill.

*Cable Address: "Medic, Chicago"*

*Subscription price: Five dollars per annum in advance*

Postage in the United States and Canada, Mexico, Hawaii, Guam, Porto Rico, and the Philippines, free; foreign postage, $2.50. Subscriptions may commence at any time. Volumes begin with the first issue of January and of July.


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